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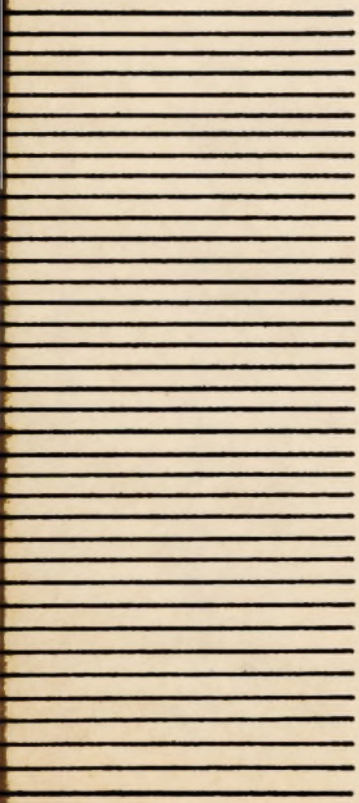
WARS AND POPULATION



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WARS AND POPULATION

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PART I. INTRODUCTION

Wars, the scourge of human society, are a product of private property, a result of the rise of antagonistic classes and states. In Antiquity wars were fought in the interest of the slave-owners and aimed mainly at the capture of slaves. The Ancient Greek philosopher Aristotle considered war the art of procuring slaves. In the Middle Ages the purpose of feudal wars was to seize lands and people in order to swell the revenue of the ruling class. In the period of capitalism's birth, war was one of the sources for the primitive accumulation of capital. In the age of industrial capitalism the biggest powers seized colonies to expand markets for the sale of their goods and acquire sources of raw materials and spheres of influence. In that period Britain, crushing the armed resistance of the Indians, captured all of India. Simultaneously she considerably extended her possessions in Africa. France consolidated her positions in North and Central Africa and captured Indo-China, Madagascar and other territories. The United States continued to push back the Indians and Mexicans, seizing more and more territory. In the same period tsarist Russia completed the conquest of the Caucasus and Central Asia.

The territorial division of the world between the biggest capitalist powers was completed towards the end of the 19th century. The subsequent expansion of markets and acquisition of raw-material sources became possible only through a redivision of the world, which led, inevitably, to imperialist wars.

World War I was a war for the redivision of the world and the spheres of influence. The antagonism between the

interests of the British and French imperialists, who had seized the most lucrative colonies, and the interests of German imperialism, which developed later than the others and therefore "missed" this partition of the world, was the main cause of World War I. It was the result of the operation of the law of uneven economic and political development of the capitalist countries. For both belligerent sides the 1914-18 war was an imperialist, i.e., predatory, piratical war.

World War II broke out 21 years after the end of World War I. German imperialism again clashed with British and French imperialism. At the first stage it was an unjust war on both sides. Subsequently, especially after the Soviet Union became involved in it, the nature and political aims of the war changed radically. It became an anti-fascist war, a war of all progressive mankind for liberation from the enemy invasion. The war ended in the defeat of the aggressors.

The need for preventing wars in future was repeatedly stressed at the Congresses of the C. P. S. U. held after the Great Patriotic War. In his report to the 24th C. P. S. U. Congress L. I. Brezhnev said: "For a quarter-century now, mankind has been safeguarded from world war. That is another historic achievement of the peoples to which the Soviet Union and its foreign policy have made a considerable contribution." However, it is not possible "to consider the threat of another world war as being completely eliminated. It is the vital task of all the peaceable states, of all the peoples, to prevent this threat from becoming reality."

* * *

The influence of wars on the population from the point of view of the demographer can be studied from many different angles. First of all, this influence can be examined *quantitatively*, that is, by determining the size of *losses* suffered by the population in war time. This is the most important and main part of the task in studying the impact of wars on population. But the change in size is closely linked with changes in the *composition of the population*, because wars bring about substantial altera-

tions in the sex, age and family composition of the population. Wars also exercise a considerable influence on the *physical development* and the level of the population's capacity for work (disability). Moreover, war affects the level of morbidity; the spread of epidemics is often connected with hostilities which change a people's entire way of life. Mention must also be made of the impact of war on the *cultural level* of the population: literacy and school attendance are directly connected with the general position of a country at war.

We have set ourselves the narrower task of establishing the scale of loss of life in the armed forces during wars, particularly the period of imperialism. We have confined ourselves mainly to Europe, because it is this part of the world that has been most affected by wars. In some cases data pertaining to other parts of the world have also been used. This has been particularly necessary in ascertaining 20th-century war losses when armed conflicts between the powers spread into world wars.

Let us begin by noting that wars differ sharply in their nature. As early as 1915, Lenin pointed out: "I think it mistaken in theory and harmful in practice *not* to distinguish types of wars." [1] Elsewhere Lenin stressed that "wars are a supremely varied, diverse, complex thing. One cannot approach them with a general pattern." [2]

It is one thing when a war is the result of a people's striving to cast off the yoke of oppression and it is quite a different matter when a war is fought between two states which are settling by force of arms a dispute over the division of spoils.

The founders of Marxism-Leninism in numerous works divided wars strictly into two types: just, progressive wars and unjust, reactionary wars.

Just wars are wars waged by peoples for liberation from foreign enslavement, for the independence of their country and the abolition of exploitation.

Unjust wars are predatory, piratical wars; their aim is to seize foreign territory and to enslave other countries and peoples.

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[1] V. I. Lenin, *Collected Works*, Vol. 35, p. 200.
[2] Ibid., p. 273.

War is always an armed conflict between two sides. Therefore it is not enough to define war as just and unjust. A distinction must be made on *whose side* it is just and on whose it is unjust, or it should be indicated that it is unjust on *both sides*.

Lenin, for example, considered World War I unjust on *both sides*. One and the same war can be unjust for *one* belligerent and just for *another* belligerent. If one side wages a just war and has just aims in the war, it is taken for granted that the other side wages an unjust, aggressive war and pursues aims of conquest. A war can be unjust on both sides but, naturally, it cannot be just on both sides.

Total losses in a war are established by summing up the losses of *both* belligerents.

For a statistical analysis of the loss of life in wars it is advisable to divide all wars into the following three groups:

1) wars between states;
2) civil and national-liberation wars;
3) colonial wars.

This grouping of wars, however, is dependent on a multitude of conditions. In a number of cases wars between states can be regarded as national-liberation wars. Nor is it correct to counterpose colonial wars to wars between states, since some colonial wars were fought against separate states. But the nature of these wars, the methods of waging them and the theatres of hostilities make it possible to single out wars of European powers against a number of non-European states into a group of colonial wars.

On the other hand, the group of wars between states includes chiefly wars waged by European countries against each other, although at times these wars were colonial (for example, the Italo-Turkish war of 1911-12).

For our study of war losses it is necessary to set definite historical boundaries. Periodisation is particularly important since any study of war losses without properly defined historical boundaries does not yield the necessary results.

The wider the period covered by a study, the fuller the comparison and analysis of data on the loss of life in wars. Hence the desire of some scholars to cover large

historical periods, for example, the last thousand years. In our opinion, however, such deep delving into the early Middle Ages is not justified. The scarcity of material available now about those times and its unreliability offer no grounds for any firm conclusions. The use of scattered information about losses in wars of such a distant age can only becloud the picture. For this reason we, when dealing with Antiquity and the early Middle Ages, confined ourselves to the most general information about losses in various wars and battles.

More or less reliable data on wars in Europe and the resultant number of killed and wounded are available only since the beginning of the 17th century—a fact which has been decisive in our choice of a starting-point for our calculations. This point is the year 1600. Thus, our calculations cover three and a half centuries of the history of Europe—a period sufficiently large to draw definite conclusions by comparing data on separate wars.

During the last three and a half centuries Europe has undergone a tremendous socio-economic evolution. The 17th and 18th centuries were the age of primitive accumulation of capital. Europe entered a new epoch at the end of the 18th century, the epoch of industrial capitalism, ushered in by the French bourgeois revolution. The revolutionary and then Napoleonic wars heralded the end of feudalism in Europe and the beginning of the age of "free" capitalism. "Napoleon's imperialist wars," Lenin wrote, "continued for many years, took up a whole epoch and exhibited an extremely complex network of imperialist relationships interwoven with national-liberation movements. And as a result, through all this epoch, unusually rich in wars and tragedies (tragedies of whole peoples), history went forward from feudalism to 'free' capitalism."[1] In the 19th century, the capitalist system rapidly developed in Europe and toward the end of it capitalism entered a new stage in its development—it became decaying, imperialist capitalism.

Lenin wrote: "Imperialism is the highest stage in the development of capitalism, reached only in the 20th century.... From the liberator of nations, which it was in

[1] V. I. Lenin, *Collected Works*, Vol. 27, p. 51.

the struggle against feudalism, capitalism in its imperialist stage has turned into the greatest oppressor of nations. Formerly progressive, capitalism has become reactionary; it has developed the forces of production to such a degree that mankind is faced with the alternative of adopting socialism or of experiencing years and even decades of armed struggle between the 'Great' Powers for the artificial preservation of capitalism by means of colonies, monopolies, privileges and national oppression of every kind." [1]

In our study of the loss of life in European wars over the past three and a half centuries we have been able to determine the scale of these losses in different periods. Beginning our analysis with war losses in the period of the disintegration of feudalism and the emergence of capitalism, we end it wath World War II. The first two centuries represent the period of capitalism's formation; the end of the 18th and almost the entire 19th century mark the period of industrial capitalism, while the period of monopoly capitalism began at the end of the 19th century. In our summary of the main results, we have always proceeded from this method of periodisation and have thus been able to compare war losses at *different periods of Europe's social and economic development.*

The victory of the Great October Socialist Revolution in Russia in 1917 ushered in a new socio-economic system destined to deliver mankind from the yoke of capital, from imperialist wars.

From the very beginning the Soviet state set itself the task of ending the imperialist war raging at that time. The Decree on Peace, written by Lenin himself, was one of the first acts of the Soviet state.

The Soviet Union staunchly upholds the Leninist policy of peaceful coexistence of states with different socio-economic systems and is actively working for peace among the nations. Even prior to World War II the U. S. S. R. proposed general disarmament and in the post-war period it was the Soviet Union which repeatedly advocated disarmament and the prohibition of all atomic and thermonuclear weapons.

[1] V. I. Lenin, *Collected Works*, Vol. 21, pp. 301-302.

Socialism stands for peace, and it is the successes of the socialist system which have created a real possibility of banishing war for ever from the life of mankind.

Chapter I. METHODS OF ESTIMATING HUMAN LOSSES

War exerts a tremendous impact on the dynamics of population. The purpose of our study is to determine the scale and degree of this impact.

Statistical methods are extremely useful in ascertaining the influence of wars on population and have enabled us to create a picture of what would have obtained had there been no wars and to compare it with the actual state of affairs.

The influence of war on population can be traced by comparing two population figures: the *hypothetical*, i.e., the level which a country most probably would have reached had it continued its peaceful development, and the *actual*, i.e., the size of the country's population after the end of hostilities or at any given period in the war. The difference between these two figures should be *credited* to the influence of war. This method allows us to determine the degree to which a war influences population dynamics.

The main rule of an experimental analysis is formulated in the principle: *post hoc, ergo propter hoc* (after this, therefore on account of this). Can we apply this principle and say: after the war, therefore, on account of war? In other words, is it possible to say that the size of the population in a country after the end of hostilities is the direct result of that war, or that other factors, unrelated to the war, also played a certain part?

Indeed, not all the changes in population during a war can be attributed to the latter's influence. Let us take, for example, natural calamities: earthquakes, floods, drought, etc. If they occur during a war, their influence becomes intermingled with the war impact. Although the war plays no part in these natural disasters, it frequently aggravates their effect on the population.

In war time, unfavourable weather conditions, for example, may result in widespread crop failures, and thus

lead to famine and higher mortality. The question is, should this higher mortality be attributed to the war? It is a fact that famine resulting from drought claims a heavy toll even in peace time. Suffice it to recall the 1891-92 famine in Russia when mortality rose by 15 per cent. Moreover, wars add to the difficulties of supplying the famine-stricken areas and thereby contribute to mortality. Let us take, for example, the 1943 famine in India. It arose as a result of unfavourable weather conditions, but was considerably exacerbated by the war, owing to which the shipment of rice from Burma to the famine-stricken areas was discontinued, worse still was the complete lack of concern on the part of the colonial authorities. The famine claimed 3.5 million lives, but a large proportion of the victims must be put in the category of war victims.

Special consideration should be given to the question of famine not during a war but immediately *after it*. This was the case in Soviet Russia in 1921 when a drought in the Volga area brought about a crop failure and consequent famine and higher mortality.

The crop failure as such was caused by climatic factors, but the resultant famine was to a large extent a consequence of the economic chaos in the country after three years of imperialist war and three years of Civil War. Had there been no wars the crop failure, naturally, would not have produced such a destructive aftermath. First, the peasantry would have had some emergency stocks of grain and, second, the transport system would have not been in such a chaotic condition and could have delivered food to the drought-stricken areas. Consequently, the influence of meteorological factors, too, must be considered alongside the socio-historical conditions prevailing at the time. The aftermath of a post-war crop failure must to a large degree be credited to the influence of the war.

Even more important is the connection between epidemics and wars. If, during a war or immediately after it, an epidemic breaks out claiming thousands, even hundreds of thousands of lives, to what degree should this increased mortality be attributed to war? Usually in war time or immediately after it epidemics occur among soldiers and spread swiftly to the population. But there are also epi-

demics in peace time that are in no way related to war either as regards their origin or the conditions of their spread. The question is to what extent can epidemics in war conditions be ascribed to the influence of war and to what extent are they dependent on it? In some cases a solution to this question can be found by studying the origins of the epidemic, but it is not always possible to discover the causes of an outbreak. It is a historical fact that most war-time epidemics must be credited to war because war-time conditions favour their outbreak and spread. But, whenever possible, the historian should single out cases where there are no grounds for assuming that the epidemic is attributable to war.

The situation is much more complicated in cases when epidemics break out immediately after a war. This, for example, was the case with the pandemy of Spanish flu which swept Europe shortly after World War I. Should the millions of people who perished during this outbreak be credited to war or should it be considered as some kind of a 'natural' calamity not related to the war at all? To this day no one has definitely answered this question, although, in our opinion, there is every ground for considering the outbreak a result of the war. Be that as it may, the percentage of sick people and the ensuing death rate were particularly high due to general exhaustion resulting from four years of war and the lack of adequate preventive measures to combat the disease. Of course, not all events during or immediately after a war should necessarily be credited to its influence, but if a war does not fully determine all the changes in the size and dynamics of the population in war time, it certainly exerts a decisive influence on them.

The degree to which the impact of war prevails over other factors affecting the population depends above all on the duration of the war, and the strain it imposes on the country involved. The Spanish-American War of 1898 caused no serious upheavals either in the United States or Spain and, therefore, did not noticeably affect the size of their population. The impact of the two world wars in our century on the population dynamics was entirely different. Living conditions in the belligerent countries suffered so violent an upheaval that all changes in the

composition and size of population can naturally be credited to these wars. In these cases we have every right to claim that all the other factors are insignificant and may be justifiably discounted.

Post-war conditions are the heritage of that particular war. The greater the scale of hostilities, the more applicable is this principle. The influence of war, as stated above, can be ascertained by comparing the actual size of the population with the hypothetical. The hypothetical size of the population must be as close as possible to the level which would have been attained had there been no war. Let us consider the following example: country *A* had a population of 50 million before the war and would, most probably, have increased to 52 million given three peace years. But actually after three years of war the population had sunk to 47 million. From this it clearly follows that the shrinkage of population in this country as a result of three years of war is five million.

At this point, we want to warn the reader against possible miscalculations. The shrinkage of population owing to war is often determined by comparing the size of population *before* and *after* the war. In our example the pre-war population figure was 50 million—the post-war, 47; consequently the population would seem to have shrunk by 3 million. However, this calculation is absolutely wrong. A comparison of the pre-war and post-war populations, of course, is perfectly legitimate. It gives us an idea of the population decline *in war time*. But this figure by no means represents population shrinkage *as a result of war*. Indeed, what does the decline of population in war time depend upon? On the difference between the total number of deaths and births during these years (without taking account of migration processes). If in country *A* 5 million people died during 3 years of war (including battle casualties) and only 2 million were born, the population declined by 3 million. Naturally, this is the direct result of the war which greatly increased the number of deaths as compared with the number of births. But that is not all: war not only increases mortality but also reduces births. The influence of war on the increase in mortality can be demonstrated by the following example. Let us take country *B*, also with a population of 50 mil-

lion, and at war with country *A*. In country *B* after three years of war the size of the population did not change at all, remaining at a constant level of 50 million. Does this mean that country *B* suffered no shrinkage in size of population as a result of the war? Not at all. The population was stabilised because the number of deaths, including war losses, was, say, 4 million and the number of births also 4 million. Thus, the population in country *B* did not decline at all during all the three war years. But from

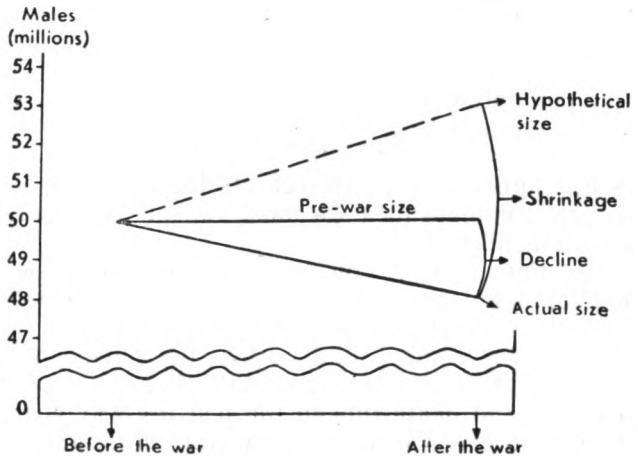

Fig. 1. Shrinkage and Decline in the Number of Males

this it does not follow that the war exerted no influence whatsoever on the size of population. Of the 4 million dead more than half perished in battle, and hence we cannot say that the war did not affect the country's population. Had there been no war the size of population in country *B* would have grown considerably over these three years. A stable population or even a slow increase reveal the influence of war just as much as an absolute decline. Hence, the opinion that a comparison of pre- and post-war population determines the degree of a war's influence is absolutely wrong. The longer the duration of a war the bigger the part played by the time factor which complicates this comparison.

Therefore, it is necessary to differentiate the concept of population *shrinkage* in war time from the concept of a general population *decline.*

The term *population decline* covers all cases of an absolute reduction in the size of a population resulting from the excess number of deaths over births during a set period, while *shrinkage in the population* is a reduction in size resulting from the influence of war.

These propositions can be graphically presented in the following way (see *Fig. 1* on page 15).

In this example the population *decline* is

$$50 - 47 = 3$$

while the population *shrinkage* is

$$52 - 47 = 5$$

The decline figure only partly reflects the influence of war and for any complete idea we must consult the figures of population shrinkage.

The question arises, how are we to determine the hypothetical population size? For this it is necessary to extrapolate, as exactly as possible, the dynamics of the population in the country had normal life not been interrupted by war. It would be simplest of all to proceed from the birth-rate and death-rate in the last pre-war year and extend them to the war years. However, this method has the shortcoming that one pre-war year chosen at random may not be typical. Therefore, it is better to take not one year but the average for three to five pre-war years. Even this, however, is no guarantee against error; taking the average for a number of years we cancel out all the dynamic tendencies characteristic of the population in the given country. For example, as regards births such tendencies are quite substantial and to ignore them could lead to a significant mistake. This error will be the more noticeable, the bigger the number of war years. For example in determining the hypothetical number of newborn infants in Western Europe from 1914 to 1919 we, in our work *Growth of Population in Europe*, did not extend the number of births in pre-war time (9.9 million) to the war years, but proceeded from the premise that had there been no war the number of births would have declined

annually by 100,000. This adjustment for the downward trend in births gave a figure of 2 million.

An adjustment should also be made for mortality if a similar tendency had existed in the pre-war period.

Having established the hypothetical number of births and deaths, it is not difficult to determine the hypothetical size of a country's population a few years after the beginning of the war, or at the moment hostilities ceased. If there are population census data for that moment, a comparison of the hypothetical figure with the actual one gives the magnitude of population shrinkage, i.e., the total loss caused by the war. For example, had there been a general population census throughout Western Europe on January 1, 1919 showing a population of 326 million, and had calculations been made giving a hypothetical population of, let us say, 349 million on the same date, had there been no war, then the population *shrinkage* caused by the war would have equalled 23 million. This magnitude naturally differs considerably from the population decline which amounted to eight million, since on January 1, 1914, the population of Western Europe was 334 million.

Thus, to obtain the magnitude of shrinkage by what is known as the balance method we must have the returns of a population census. Unfortunately such data are not always readily available. First, population censuses are frequently not carried out immediately after a war. For example, population censuses in most European countries were taken only two or three years after the end of World War I. Second, wars often lead to changes in frontiers and census returns become incommensurable. Third, and for us the most important, is that the shrinkage figure obtained by the balance method, i.e., as the difference between the hypothetical and actual size of population, tells us nothing about the concrete causes of the shrinkage nor about the kind of losses. The shrinkage figure per se provides no material for judging the *composition of the shrinkage* and to what causes it must be attributed.

Yet to establish the composition of shrinkage is no less important than to determine its absolute magnitude. It makes a difference whether the shrinkage occurred as a result of a sharp drop in births, higher mortality or battle

casualties. The census data cannot reveal everything we need. A population census is usually made after a war has ended. Yet at times it is of interest to calculate the approximate shrinkage while the war is on. Therefore it is necessary to construct a balance of population size, basing ourselves not only on post-war and war-time censuses, but also utilising all the materials of current population statistics in the broad sense of the word.

Such a balance of the population in Europe as applied chiefly to World War II, can be presented in a table consisting of three columns. The first column gives actual data, the second hypothetical, and the third, the difference between the hypothetical and actual figures.

The horizontal lines in the table designate the various causes of population shrinkage.

To establish the causes of population shrinkage it is important, on the one hand, to ascertain the loss of life and, on the other, the result of a drop in births. The loss of life includes all cases of death resulting from the war: death of people on the battlefields, death from wounds, disease, etc. In addition, the population shrinks owing to a decline in births during war time. From the point of view of the state and the economy it is of great importance whether the population shrank because of the death of men in their prime or because a smaller number of infants was born. Therefore, under no circumstances must we limit ourselves to one shrinkage figure; it must be divided into the two main kinds: loss of life and the result of a drop in births.

But loss of life must also be differentiated by causes. Here it is necessary to differentiate between losses directly connected with military operations (we shall call them *direct losses*) and losses which are only indirectly a result of the war. Among the latter should be included all cases of civilian deaths from epidemics breaking out as a consequence of war, deaths from starvation, forced changes of residence and the consequent upsetting of customary living conditions, the absence of adequate and timely medical aid, etc. Higher mortality of the civilian population must be attributed to war. To determine the size of these indirect losses is one of the most important tasks of

demographers and one which cannot always be easily accomplished.

In determining indirect losses it is necessary to bear in mind the population age-groups. Without this, a comparison of the number of dead in war time with the number of dead in peace time or with the hypothetical number of dead in war time, is pointless. It frequently happens that the number of deaths among the civilian population in war years is smaller than the number of dead before the war. This occurs because of a drop in the infant death rate in war time (a result of the decline in births). To gain a proper idea of the influence exerted by war on mortality one should study the mortality of the civilian population by age-groups. In particular, for children the hypothetical number of deaths should be established by studying the normal rate of births. The hypothetical data on child mortality will possibly exceed the actual number because, owing to the low number of births even if there is an increase in infant mortality, the absolute number of infants who die in war time is small. The difference somewhat minimises the influence of the drop in births. Even so, there will be a shrinkage owing to a drop in births and this must be taken into account.

The category of "direct" war losses requires a more detailed division. First of all, it is very important to divide up all direct losses into the two main groups: servicemen and civilians.[1] To designate persons in military service some scholars use the term "mobilised population", but in our opinion this is not a very accurate term. First, the term "serviceman" is the only correct one as being the opposite to the concept "civilian": after all, the civilian population, too, can be mobilised for various war-time jobs (digging trenches, building fortifications,

[1] It should be noted that some demographers are inclined to confuse the concepts of direct and indirect losses with the concept of losses among servicemen and the civilian population. For example, L. Hersch (see his article in the journal *Metron*, Vol. 5, No. 1, 1925, p. 90) identifies the losses among servicemen with all direct war losses, while all losses among the civilian population are regarded by him as indirect—a method that is now generally accepted as wrong when applied to World War II. But, even in the case of World War I, the number of casualties which Hersch carefully calculated was wrong since even then many civilians were the victims of hostilities.

etc.). Second, part of the army, and at times even the entire army, consists of volunteers. For example, by the summer of 1918, almost half a million volunteers had signed up for the Red Army, and in the Great Patriotic War a tremendous number of Soviet citizens went to the front as volunteers. Some 120,000 Muscovites took part in the battle of Moscow as People's Volunteers. In 1914-18, France had 229,000 French and 40,000 foreign volunteers. During the national revolutionary war of 1936-39 in Spain, 35,000 foreign volunteers from 54 countries fought on the side of the Republicans. Third, in former times armies were manned not by general mobilisation but by recruitment or hire. This shows that the term "serviceman" is much more accurate in this context than "mobilised population". All soldiers and officers serving in military units or military institutions who were either with the army in the field or in the reserves, or in military medical establishments should be included among servicemen; we also include guerrillas in the category of servicemen. The entire remaining population is civilian.

It must not be assumed that losses among civilians can be only indirect, inasmuch as they do not take part in hostilities. Many civilians perish directly as a result of military operations. Losses among civilians were especially large during World War II owing to the inhuman warfare methods employed by the nazi command. Suffice it to recall the aerial bombing of cities, which the fascists were already practising during the Civil War in Spain, to realise how many civilians were killed by demolition and incendiary bombs. Direct war losses naturally include civilians killed by shelling.

Civilian losses from hostilities are not limited to the victims of aerial bombing and shelling. A huge number of civilians perished from nazi terror. The Hitlerites engaged in the mass annihilation of peoples on the territories they captured, especially in the Slav countries. This mass extermination was one of the basic "theoretical" principles of nazism and one of the main points of their racialist doctrine.

In this connection mention should also be made of another, somewhat disguised, form of terror: the transportation of civilians for forced labour. The living conditions

of Soviet citizens in Germany were so unbearable that their wholesale deaths must also be regarded as direct war losses.

In addition to these causes, mention should be made of the death of civilians living in battle areas and the death of crews and passengers of the merchant marine and civil aviation.

This differentiation between servicemen and civilians helps establish more precisely the figures of war losses.

The next methodological question is the *classification of losses* among servicemen.

It is necessary strictly to differentiate losses in the demographic sense from losses in the military sense. From the *demographic* point of view, losses among servicemen must include all cases of death, irrespective of their causes (wounds, diseases, etc.). From the *military* point of view, losses, or casualties, are usually understood to mean not only the death of soldiers and officers, but also any disablement, even temporary. That is why military casualties, in addition to killed and dead, include all those missing or taken prisoner by the enemy, and also all wounded and sick placed in medical institutions.

The term "irreplaceable losses" is often used in the military sense to cover the killed, those who died from various other causes, the missing, and those taken prisoner. In some cases irreplaceable losses form the total number *put out of action*: to the number of killed, dead and taken prisoner are added soldiers and officers discharged from further service after being wounded or sick. German literature employs the term "blood casualties" (*blutige Verluste*) which means the number of killed and wounded, including also wounded taken prisoner. All these concepts of losses are important from the military point of view because they give an idea of the military manpower resources of the enemy and one's own. To assess the outcome of a military operation it is important to know exactly how much the numerical strength of an army has declined, irrespective of whether the soldiers disabled in action return subsequently to the frontline or not. Human losses as a result of hostilities are determined from the military angle not only by the number of

killed, but by the total number of disabled soldiers, even though this disablement is only temporary.

For some calculations it is worthwhile to estimate battle losses taking into account the return of part of the wounded into service. This reduces total losses by the number of wounded returning to their units after recuperation.

Let us briefly discuss the classification of casualties from the military angle.

Usually battle casualties are subdivided into killed, wounded, taken prisoner and missing. The latter category lists all soldiers and officers of whose fate the military authorities have no information at all. This group usually includes killed, whose death has not yet been established, or those presumably taken prisoner.

Let us go over now to a *demographic* classification of losses.

If a wounded or sick serviceman recuperates or a prisoner returns from captivity, then all these cases which figured in one or other column as temporary or irreplaceable military casualties, are not regarded as losses demographically. Speaking of losses in the demographic sense, we mean the *death* of servicemen from various causes. If an invalid dismissed from military service is irreplaceably lost for the War Office, this, demographically speaking, is not regarded as a loss since the life of the soldier or officer has been preserved.

The categories of demographic losses have to be specified, with stress being laid on ascertaining the *cause* of the losses. This cause may directly follow from *hostilities* or be indirectly connected with them. Therefore all losses are divided into *battle* and *non-battle* losses.

Battle losses, in their turn, are subdivided into killed and dead from wounds. Among the *killed* are listed all who perished in battle.

Among *non-battle* losses are, first, all cases of death from disease among soldiers and officers in hospitals and other medical institutions and, second, all cases of sudden death of servicemen outside of medical institutions.

In the category of non-battle losses it is necessary to single out soldiers and officers who died from injuries sustained not on the battlefield, those who committed

suicide or were executed on sentences of courts-martial and military tribunals. All cases of death in captivity, particularly from starvation and disease, should be specially listed. Strictly speaking, death in captivity from battle wounds should be classed among battle losses. However, the reservation must be made that many wounded who died in captivity most probably would have been saved from death had they been treated in hospitals of their own army. Their death can be regarded not so much as a result of the wounds but as a result of captivity.

The column "Missing" is important. This category is possible only in war time when the reason why the men dropped out of action cannot be established. After the end of the war, the column "missing" should be replaced by the column "Missing, Still Not Found". As time goes on this column shrinks because the fate of the missing soldiers and officers is gradually ascertained. After a sufficient time passes all listed in the group "Still Not Found" must be regarded as killed, if there are no grounds for considering that they have migrated.

Population censuses are of particularly great help in establishing the scale of irreplaceable loss of life resulting from war. This is especially the case if the population censuses were conducted prior to the war and shortly after it. If a census, however, was made a long time after the war the returns will bear not only the imprint of the war but also the influence of post-war factors.

Materials on the size of a country's population are of great value in studying the effect of a war. But a mere comparison of a pre-war with a post-war census does not give a clear idea of the loss of life resulting from war. It merely records the change in the size of population in the interval between the two censuses.

To determine the size of population shrinkage it is necessary, alongside the *actual size* as given by the returns of the post-war census, to calculate, as pointed out earlier, the *hypothetical size*, i.e., to establish how many persons of both sexes there would have been in the country as of the date of the post-war census had there been no war. The difference between the hypothetical figure and the actual one gives the population shrinkage resulting from the war.

This comparison alone is insufficient for our purposes. It is also necessary to establish the structure of the population shrinkage. This is graphically revealed by the diagram (see *Fig. 2*) which shows that the entire population shrinkage as a result of war can be broken down into four main categories: 1) servicemen who perished in the war; 2) civilian population which perished as a result of enemy hostilities (bombing, shelling, victims of terror, etc.) and indirect war influences (higher mortality due to

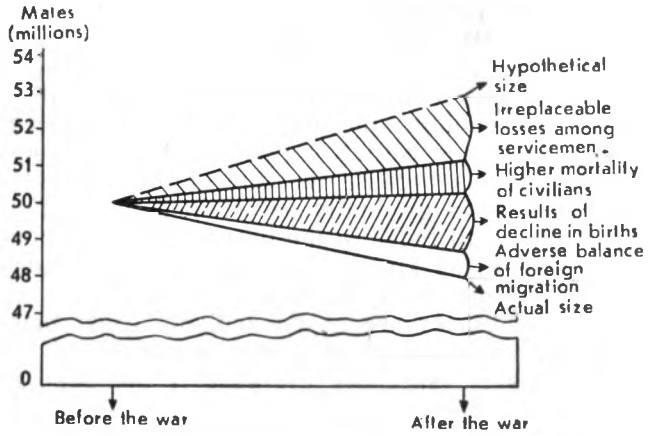

Fig. 2. Distribution of Shrinkage of Males

undernourishment, starvation, epidemics and similar causes); 3) a decline in the number of children owing to the drop in births in war time; 4) difference between the number of people who arrived and left the given country.

Data on irreplaceable losses among *servicemen* are determined by an analysis of males by *age-groups* (see *Fig. 3*).

Let us compare the actual number of males in definite age-groups with their hypothetical number on the same date had there been no war. In other words, the actual census returns are compared with the hypothetical figures for the same age-groups. The difference is regarded as the net loss resulting from war.

Hypothetical data are established by the method of age shifts. For example, in Austria, the 1934 census showed

that there were 299,000 boys aged from 5 to 10 years. According to Austrian mortality tables for 1930-33, 960 out of each 1,000 boys in this age-group should have reached the age of 25-30 under normal peace-time conditions. This means that of the 299,000 boys, 287,000 should have lived up to 1954. Yet the 1954 census registered only 214,000 males between 25 and 30. If we disregard migration processes, we may say that 73,000 people in the given

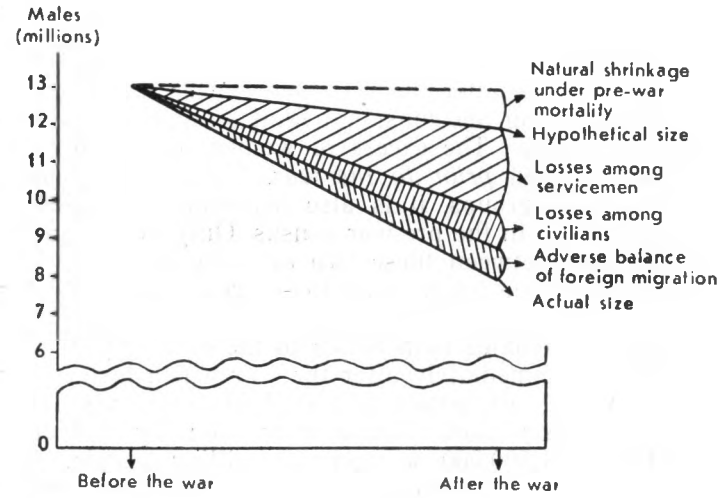

Fig. 3. Shrinkage in the Number of Males from 18 to 50 Years

age-group perished as a result of the higher war-time mortality rate. To establish losses among servicemen it is necessary to make an adjustment for male losses among civilians, although for men of call-up age this adjustment cannot be particularly significant because the overwhelming majority of men were mobilised into the army.

Taking this adjustment into account and adding up the differences between hypothetical and actual data in separate age-groups subject to the draft, we shall get a figure of total war losses among servicemen (for full determination of these losses it is necessary to make an adjustment for the balance of foreign migration).

Population census data can also be utilised for calculating the *excess of females*, i.e., the excess of women over men. The magnitude of this excess is often identified with the number of servicemen who perished in the war but, in a number of cases, this interpretation may lead to a mistake in the calculation. For this reason it is necessary in analysing the excess of females to take into account a number of factors and circumstances.

First of all, these data cover, not the entire population, but only definite age-groups. Moreover, if the census was conducted immediately after the war, it is necessary to study the age-groups between 18 and 49, and if, say, five years after the war, between 23 and 54.

But in so doing one must not limit oneself to the post-war census alone. The excess of women over men could well have existed *prior to the war*. Thus, when dealing with these age-groups, it is also necessary to take data on the sex ratio in the pre-war census. Only by comparing the difference between these two *excesses* in the number of women can one judge male losses resulting from war. For example, if eight years prior to the war there were 300,000 more females than males in the 8 to 39-year age-group and if immediately after the war which lasted, say, two years, i.e., altogether a period of ten years, there were 1.5 million more women than men, by deducting 300,000 from 1,500,000 we get 1.2 million people. This figure gives us an approximate idea of the losses among servicemen.

Such comparisons are permissible only if the following circumstances are taken into consideration.

First, migration processes must not be ignored. It is a fact that among emigrants and immigrants the share of men is much higher than that of women. Consequently, it is necessary to make an adjustment for the sex composition of emigrants and immigrants. If not, war losses may be exaggerated by considering that part of the men who went abroad perished at the front.

Second, use of the excess of females is all the less justifiable, the greater the number of war victims among civilians. If in war time wives and sisters of servicemen perished in large numbers owing to starvation, disease, aerial bombings and other causes, the excess of females

will naturally give underestimated data on the number of perished soldiers and officers. Excess of females can furnish a correct idea of the number of dead soldiers and officers only when the civilian population has a peacetime mortality rate.

Third, the excess of females in definite age-groups would increase even without a war because of the higher mortality of men as compared with women in the older age-groups. In all European countries there is a definite regularity in the ratio of sexes expressed in that, all other conditions being equal, as the age increases the proportion of men compared to women of the same age-group declines. This means that if prior to the war the excess of females was 300,000, ten years later it would increase to 400,000 for the same age-groups. Consequently losses among servicemen would be not 1.2 million but 1.1 million. Not to take this circumstance into account means to exaggerate male war losses.

If we ignore the first and third of these factors we are bound to exaggerate the figure for male war losses; to ignore the second factor means to introduce a distortion which can be only slightly mitigated by ignoring the first and third factors. Therefore, in each case corresponding calculations should be made on the basis of the entire mass of statistical data, without relying on the reciprocal compensation of the influence of these factors.

In using data on the excess of females it is also important to remember that if a population census was made some time after the war, it will reflect the impact not only of the war itself, but also the *influence of its aftermath.*

It should be noted that data on population censuses are only available for the 19th and 20th centuries. The assessment of war losses in the 17th and 18th centuries is complicated by the absence of population census material for that period. In a number of cases, therefore, it is necessary to establish definite *proportions.* For example, on the basis of actual data it is possible to determine the ratio between the number of killed and the number who died from disease. The deduced proportion is characteristic of a definite epoch and can subsequently be applied in other similar cases where direct data are not available.

Estimate of Population Shrinkage in War Time

Type of losses	Actual data	Hypothetical data	Difference
	Number of deaths during the war years	Number of deaths had there been no war (that is, at the normal peace-time mortality rate)	Losses owing to war
HUMAN LOSSES			
I. Direct losses			
1. Servicemen			
A. Battle losses			
a) Killed on battlefield			
b) Died from wounds, burns and frost-bite in battle conditions			
c) Died from poison gas and various diseases directly caused by the enemy			
Total battle losses			
B. Non-battle losses			
a) Died from diseases, burns and frost-bite in non-battle conditions			
b) Died from accidents or sentenced to death by court-martial			
c) Died in captivity from starvation, disease and other causes			
Total non-battle losses			
All direct losses among servicemen			
2. Civilian population			
A. Victims of aerial bombing and shelling outside frontline zone			
B. Death of civilians in frontline zone from various causes			

Continuation

Type of losses	Actual data	Hypothetical data	Difference
	Number of deaths during the war years	Number of deaths had there been no war (that is, at the normal peace-time mortality rate)	Losses owing to war
C. Victims of terror (including those who died in prisons and concentration camps)			
D. Losses due to forced transportation of population			
E. Death of crews and passengers of merchant ships and civil aircraft			
Total direct losses among civilian population			
All direct losses			
II. **Indirect losses**			
Deaths of civilians *			
All human losses			
	Number of births in war years	Number of births had there been no war	Drop in births due to war
RESULT OF DROP IN BIRTHS			
TOTAL WAR SHRINKAGE	—	—	

* Excluding deaths of civilians put in the column of direct losses.

To determine the number of killed it is sometimes possible to utilise the *ratio between the number of killed and wounded.* Data on casualties often give total figures for the number of killed and wounded. In such cases knowledge of the proper ratio between them enables us to determine the number of killed.

Similarly, data on *casualties among officers* may be used to ascertain total losses. Data on the casualty ratio among officers and soldiers make it possible, on the basis of losses among officers, to estimate total casualties for all servicemen.

The classification of losses and methods of calculating total population shrinkage resulting from war is illustrated by the scheme (see pp. 28-29):

Total shrinkage of population due to war can be determined by adding two differences: the difference between the actual loss of life and hypothetical mortality rate during the war years and the difference between the actual and hypothetical *number of births.*[1] This scheme is compiled on the basis of World War II data because it reflects the fiendish methods of warfare employed by the nazis. But with some modification, it is suitable for calculating losses in other wars.

It goes without saying that not all the columns in the above scheme can be filled in with reliable figures. How, for example, is it possible to calculate the number of civilians who perished in the zone close to the frontline? It is also difficult to determine the number of victims of terror, deportation, etc. However, certain approximate estimates based on the anamnestic method are possible

[1] The total war shrinkage can be determined in this way only if the second difference (between the actual and hypothetical number of births) is negative. Yet it is a fact that during World War II the birth-rate in some belligerent countries was higher than before the war. Consequently, the difference will be positive. In such a case it should be disregarded, because it would be wrong to assume that higher birth-rate in war time reduces the war losses. In case of a higher birth-rate it may so happen that instead of war losses there would be an increase in the population as a result of the war. For example, if a country lost 100,000 in killed and dead, while a higher birth-rate gave a surplus of 150,000 births, the population would increase by 50,000. Such an increase is a purely arithmetical construction and naturally should be disregarded.

which could give a more precise idea of the losses caused by the war.

The scheme also shows that not all the soldiers and officers who perished in the war can be fully credited to the war per se; some of them would have died anyway. Such deaths should be excluded if we want to get a figure for losses resulting solely from the war. Thus, when we speak of direct population losses from war, we must differentiate between two concepts: *total losses*, that is, the actual losses during the war, and *net war losses*, losses from which cases of natural death are deducted. The latter magnitude reflects higher *mortality* as a result of military operations.

Even without this adjustment the figures in the first column of the "direct losses" section give a correct idea of war losses. But to calculate the total population shrinkage during the war it is necessary to bear in mind that a certain part of the given category would have died during this period from various causes had there been no war.

If we are interested not in the total population shrinkage but in the absolute size of the direct losses resulting from hostilities, we can deduce it by summing up the figures in the first column of the first section in the scheme.

The number of deaths listed in the first column of the second section of the scheme is not entirely a result of war. Civilians die all the time. In war time, however, these figures also include *excess mortality*, i.e., higher mortality caused by war-time privations.

This *excess mortality* is established by deducting the calculated mortality in a definite age-group from the actual data.

The mortality for each year can be determined on the basis of the age composition of the population for the given year and mortality tables for the given country in prewar years. If the war lasted one year the calculation is made on the basis of data on the age composition of the given year. If the war lasted several years the calculation is based on the method of age shifts. Naturally, the number of civilians listed in the section of direct losses should be deducted from the size of the civilian population both in the first and second columns. The sum of net

losses, both direct and indirect, gives the total population shrinkage resulting from war.

Population shrinkage is not always established on the basis of sufficiently exact data. In view of this, it is desirable, wherever possible, to check all calculations by various balance comparisons. Particularly good results may be obtained by checks based on post-war population censuses. If the pre-war population of a country is known and calculations of the hypothetical dynamics of the number of births and deaths in war time have been made and

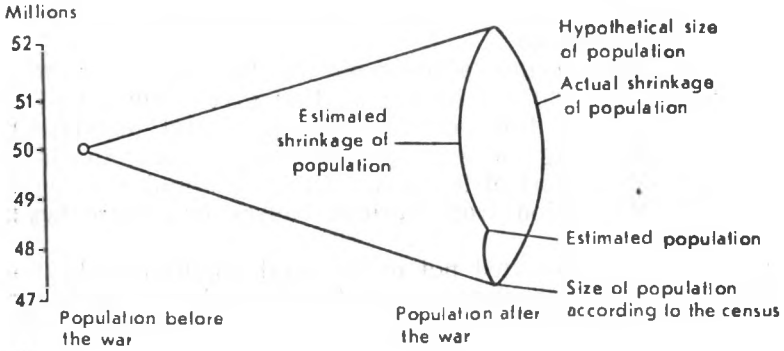

Fig. 4. Population: A Comparison of Census Data and Estimate

the war-time shrinkage estimated, it is possible to determine the probable population at the end of the year. If the census gives the actual size of population for the same date, its comparison with the hypothetical size will reveal the mistake in the calculations. This can be clearly illustrated by Figure 4 given above.

Estimating the population shrinkage in country *A* by the computation method (in future referred to as the shrinkage estimate), i.e., by separate categories of losses in accordance with the scheme on pp. 28-29 we get a figure of 4 million. By deducting this figure from the hypothetical we find that at the end of the war the country's population must be 48 million. But the census returns show 47 million. Consequently, a mistake of 1 million has been made which should be rectified and the figures of losses rendered correspondingly more precise.

In this connection, the question might arise: is it correct to credit the entire discrepancy between the actual and estimated size of a population to a mistake in the shrinkage estimate? Perhaps this discrepancy could arise from mistakes in calculating the hypothetical population size? No, this cannot be the case. The figure of the hypothetical size of population is inseverably linked with the figure which estimates the shrinkage because both proceed from one and the same hypothetical figures of births and deaths in that country, assuming no war had taken place. Therefore mistakes in these figures automatically cancel each other out and have no influence on the estimate of the population at the end of the war. Let us assume, for example, that a subsequent, more detailed study revealed that we had underestimated the figure of hypothetical births by some two million. The hypothetical population size in country *A* should then have been 54 million and not 52 million. But the estimated shrinkage would also increase by these 2 million and amount not to 4 million but to 6 million people. Thus the estimated population at the end of the war would remain the same 48 million because

$$52 - 48 \text{ and } 54 - 6 = 48.$$

Thus a divergence of one million from the census data must be ascribed to mistakes in the calculation of losses and not in the calculation of the hypothetical figures.

Speaking of differences between the estimated population size and the actual one (i.e., according to census data), we must note that in a number of cases they could have resulted from *migration* processes. All cases of emigration and immigration must be taken into account in the total balance of population size. Preponderance of emigration over immigration also creates population losses for the given country, which must not be ignored. Conversely, in a country which in war time had a favourable migration balance the decline in population owing to the war would to a certain extent be counterbalanced.

To a large extent migration processes detract from the importance of post-war censuses as sources of information on war-time population losses. Let us assume that the census reveals a definite decline in the size of

population in certain age-groups. However, we are unable to say whether this decline was due to a higher mortality in these age-groups or to the emigration of part of the population in these groups. This underlines the importance of estimating losses by the computation method. Poland is a case in point. According to a census made on February 14, 1946, Poland had a population of 23.9 million people within her 1946 borders. In 1939, 32.3 million people lived in that territory; this means that the population of Poland *declined* by 8.4 million. The hypothetical size of Poland's population by 1946 can be set at 35 million. Thus, the population *shrinkage* was 11.1 million. This shrinkage resulted from the mass murder of several million people by the nazis, higher mortality from starvation and disease during the occupation, lower birth-rate and also the eviction of Germans from Poland's Western territories. But it is impossible, even on the basis of census data, to establish the magnitude of *each* category.

It should be noted that certain authors compare the pre-war and post-war population and consider the difference between them as the total magnitude of war losses. This, for example, was the method used by the well-known statistician *V. G. Mikhailovsky*[1] when comparing the population of the gubernias in the European and Asian parts of Russia in 1914 and in 1920. He established a population loss of some 12 million during this period and tried to break down these losses into separate categories. In reality, however, these 12 million represented a population *decline* and not a *shrinkage*. Basing ourselves on this decline, we cannot draw any conclusions about wartime losses and even less so break them down into categories. A comparison of the actual sizes of population for two dates is inadequate and can give merely a distorted idea of the true magnitude of the losses. Given such an approach, it may turn out, for example, that a considerable decline in the population, resulting from a sharp drop in the birth-rate, could be regarded by the author as the effect of higher mortality. According to Mikhailovsky's method, had the size of population in 1920 equalled

[1] V. G. Mikhailovsky, "Introduction to the 1920 Census Returns". *Trudy TsSU* (Works of the Central Statistical Board), Vol. I, Issue 3.

that of 1914 there would have been no shrinkage and no losses whatsoever. In reality, however, a proper idea of the losses cannot be obtained by merely comparing the size of population on two different dates. A similar mistake was made by *Lagneau* and, later, by *Dumas*, when they found a contradiction between *d'Ivernois*'s opinion that the revolutionary wars cost France 1.5 million lives and the estimate of *Raudot de l'Yonne* the population of France declined by 1 million [1] during this period. Actually there was no contradiction here at all because these figures are incomparable.

Some authors have compared the actual post-war population with the hypothetical, but then failed to take account of the drop in the birth-rate.

Evaluating Russia's losses during the 1914-18 war, *Bogart* [2] estimated Russia's hypothetical population at 185 million on January 1, 1919; the actual figure, in his opinion, was 180 million. The five-million difference was broken down as follows: 2 million was credited to higher mortality among civilians and 2,762,064 to direct war losses. The sum of these figures gives approximately 5 million, which to Bogart's satisfaction "agrees with the estimated loss in population referred to above". The figures Bogart uses have nothing in common with reality. What is more, he omitted such a "detail" as the drop of the birth-rate in war time and constructed his entire balance of population size without this important element.

So far we have discussed population shrinkage caused by war in war time. Strictly speaking, this figure does not exhaust the entire influence exerted by war and militarism which are bred by the capitalist system. The slogan advanced by the nazis when preparing for war—"guns instead of butter"—clearly shows that in Hitlerite Germany even prior to the war the population's health was deteriorating due to the inordinate military expenditure. But here we shall omit a study of such losses caused by the militarist nature of the capitalist system and

[1] S. Dumas, *Losses of Life Caused by War*, Oxford, 1925, p. 465.
[2] G. Bogart, *Direct and Indirect Costs of the Great World War*, New York, 1920, 2nd ed., p. 281.

confine ourselves to ascertaining the losses during the *war period.*

The effect of war is tangibly felt even *after* it ends. Demographic consequences of any big war are considerable and extend over a long period. In the initial post-war period there are frequent cases of deaths among wounded and sick soldiers and officers who were in hospitals at the moment war ended and there is a higher mortality rate among those sections of the population which particularly suffered from the hostilities.

While all these "items" increase "the weight" of war losses after hostilities end, there are other fields in which this weight is somewhat eased. Let us take, for example, births. It is a fact that after a war ends there is usually a compensatory increase in marriages and births—indeed, the post-war birth-rate often considerably exceeds the pre-war rate. Thus, there is partial compensation of the population shrinkage from the war-time drop in the births. This compensation should, if possible, be calculated and the shrinkage from the drop in births during the war then accordingly corrected. But this adjustment must not be regarded as obligatory, because then the legitimate question arises of taking into account phenomena occurring immediately after the compensatory wave recedes which should also be ascribed largely to the influence of war.

During the post-war period the aftermath of war is still quite noticeable, and fades only gradually. Therefore, it is advisable to consider this war influence independently, not linking it with population shrinkage as a result of war. War has its precise limits in time, while the post-war influence has no such boundaries and, consequently, does not lend itself to any summary estimates.

* * *

To determine human losses in war time, albeit approximately, it is necessary critically to utilise diverse sources. Of great help in this respect is the study of population censuses and the use of such research methods as the establishment of proportions and extrapolations.

We lay no claim to the precision of the summary figures we computed but, in our opinion, they are closer to the truth than the figures given by various other authors. Great precision cannot be expected from data on human losses in wars. Statistics is not bookkeeping, and there is no need for clerkish thoroughness in computations in order to draw definite conclusions. The task of the demographer, sociologist, economist and historian is merely to discern definite *laws* and draw definite *conclusions*.

Chapter II. USE OF SOURCES

War-time conditions are little conducive to the provision of complete statistical data. In areas captured by the enemy every current recording of the natural movement of population is frequently brought to a halt. As for data on war losses, they too are often incomplete and fragmentary owing to the very nature of military operations. Moreover, in a number of instances army leaders give false information on losses, seeking to minimise their own and exaggerate enemy casualties. Napoleon at one time remarked: "It's as false as a war bulletin." In his military reports Napoleon himself greatly distorted reality to cast a more favourable light on his activities. Other army leaders also resorted to such distortions. For example, at the beginning of the 18th century the French Marshal Claude de Villars, dictating a dispatch about the clash of his troops with an enemy detachment of 3,000 men, stated that enemy losses amounted to 4,000 men. When his secretary drew his attention to this obvious incongruity, he "cut" the figure of casualties without a second thought from 4,000 to 2,500! In all fairness it must be said that the 20th century has provided us with many similar instances. For example, British war correspondents reporting "at first hand" on World War I battles from the Ritz Hotel in Paris, "recorded" the death of many million Germans.[1] Obvious falsification of war losses was particularly characteristic of the reports released

[1] J. Nef, *War and Human Progress*, Cambridge, 1950, p. 91.

by Hitler, who tried to deceive the German people by greatly underestimating German casualties.

Obviously such data cannot be considered a source of information on losses and must be resolutely discarded.

But even materials which may be considered more or less correct and reliable require thorough checking. Then, and only then can individual figures be utilised in presenting a general picture of a war's impact on the size of the population and giving an estimate of the loss it inflicted.

The sources of data on the loss of life in war differ. First of all, there are *official* sources which, with some exceptions, may be taken as a basis for calculation. Official data on the loss of life varied considerably from period to period.

The *first* period, covering the Middle Ages up to the beginning of the Thirty Years' War (i.e., up to 1618), has left us no reliable data on the loss of life in wars. Fragmentary information about killed and wounded in some of the biggest battles has been preserved, but the reliability of these data is doubtful. We have no documents, dispatches or records of that time.

The *second* period covers the epoch from the beginning of the Thirty Years' War to the end of the War of the Spanish Succession (1618-1713) and it was during this period that the first war dispatches appeared. They have been preserved and enable us to assess the losses not only in big battles but also in smaller skirmishes; in some cases casualties are even subdivided into categories.

The *third* period runs from the end of the War of the Spanish Succession to the mid-19th century (1713-1848). It left us diverse records, dispatches, reports, accounts and lists, which in a number of cases give details of the strength of the various armies, changes resulting from battles and even indicate the number of killed, wounded, sick and prisoners. At times these dispatches deal not only with separate battles but entire campaigns. For example, data have been preserved on losses during Napoleon's Egyptian Campaign, on those of Wellington's army in Spain and also Suvorov's dispatch on the casualties suffered by the Russian forces during the 1799 campaign. However, there were still no summary data on all

war losses. War reports were either not written or, if they were, none are extant.

The *fourth* period covers more than 100 years, up to the mid-1950s. Official data are available not only for separate battles and engagements, but also for entire wars. The Crimean War (1853-56) is the first big war for which there are official summary data. There are relatively exact data on casualties in the Prusso-Danish, Austro-Prussian and Franco-Prussian wars, the only exception being French Army losses in the 1870-71 war. Good statistical reports are available on losses in the Russo-Turkish War of 1877-78 and the Russo-Japanese War of 1904-05, published by the Russian Military Medical Department.

The evolution in the coverage of war losses can be described as follows: in the 17th and 18th centuries a full account was kept only of losses among generals; during the Napoleonic wars it was extended to include officers, and only since the mid-19th century have losses among soldiers been carefully recorded.

Official material on losses during World War I are not available for all countries. In Britain and the United States multi-volume histories of the war with official statistics have been issued. Other countries have confined themselves to the publication of reports by parliamentary commissions. Personal lists of killed, wounded and missing were issued in a number of countries (Russia, Germany, Britain and others). But in many countries there were no real official data or publications.

As regards World War II, official materials (except nazi) can also serve as a basis for determining war losses.

Alongside official data, *semi-official* sources, too, are of great help in estimating war losses. Among them are publications of various departments and organisations issued under the signatures of individual authors. For example, summaries of German war losses in the Austro-Prussian and Franco-Prussian wars were issued under the signature of *E. Engel* in publications of the Prussian Statistical Office. Among semi-official sources can be listed, for example, the book *Russia in the First World War (in Figures)*, issued by the Central Statistical Board of the U. S. S. R. in 1925; *Works of the Commission for the Study*

of the Sanitary Consequences of the War of 1914-20 (Moscow, 1923), and others.

Mention should also be made of the ***works of military historians.*** Some military historians have specialised on particular wars (for example, the Russian military historian *Maslovsky* studied the Seven Years' War; the German military historian *Moltke*, the Russo-Turkish War of 1828-29). Other scholars have contributed summary articles on wars over long historical periods. Special mention should be made of the Military Historical Lexicon edited by the French military statistician and historian *Gaston Bodart.* [1]

Reports by doctors in charge of the military medical service during the war are also of great importance. Among them are the valuable article by the Russian doctor *Avramov*, works by the French military doctors *C. Chenu* and *A. Laveran*, the Austrian military doctor *P. Myrdacz* and others.

In a number of cases published and unpublished primary materials on war casualties have been statistically processed. The British actuary *W. B. Hodge* was one of the first to make a study of the casualties of the British Army and Navy during the Napoleonic wars. Towards the end of the 19th century a French doctor named *Lagneau* [2] published his calculations of France's war losses.

At the beginning of the 20th century a statistical summary of materials on France and Austria-Hungary over a period of 300 years was given by *Bodart* in his book *Losses of Life in Modern Wars* [3] published at the height of World War I.

Christian Döring was the first to study the impact of World War I on population dynamics. His findings were published by the Copenhagen Society for the Study of the Social Consequences of the First World War—a society founded shortly after the outbreak of the war. Its first publication contained an estimate of the financial cost of

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[1] *Militär-historisches Kriegslexikon (1618-1905).* Herausgegeben von G. Bodart, Wien und Leipzig, 1908. (Hereafter *Kriegslexikon.*)

[2] G. Lagneau, "Les conséquences des guerres", *Séances et travaux de l'Académie des Sciences morales et politiques*, t. 38, 1.9/10, 1892.

[3] G. Bodart, *Losses of Life in Modern Wars. Austria-Hungary, France*, Oxford, 1916.

the world war and was issued as early as March 1916. Subsequent bulletins were almost entirely devoted to estimates of the loss of life. The first such estimate was made public in August 1916.[1] The next one, also issued during the war, dealt only with Germany and France.[2] The other issues[3] were written by Döring as soon as he had the opportunity to sum up the results of the unprecedented havoc wreaked by the world war. Döring also contributed several articles analysing the impact of the world war on the population.

The works of the Special Commission for the Study of Sanitary Consequences of the War of 1914-18 are of considerable value for establishing Russia's losses. The first works of this Commission were issued by the People's Commissariat of Health in 1923.

Among studies devoted to the influence of World War I on the size of the population mention should be made of the works of Professor *L. Hersch*[4] of Geneva and the Italian statistician *F. Savorgnan.*[5]

In addition to investigations covering the losses of all First World War belligerents, there are many studies on individual countries, such as *M. Huber*'s monograph on French losses, *W. Winkler*'s on the Austro-Hungarian losses, *L. Ayres*' on U.S. losses, etc.

The influence of World War II on the population has been little studied. A detailed summary of the loss of life in individual countries has been compiled by *G. Frumkin*,[6] editor of the Statistical Handbooks of the League of

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[1] "Menschenverluste im Kriege", *Bulletin der Studiengesellschaft für Soziale Folgen des Krieges* No 2, Copenhagen, August 1, 1916.

[2] C. Döring, "Die Bevölkerungsbewegung im Weltkrieg. 1. Deutschland und Frankreich, unter Mitarbeit von V. Perasitsch", *Bulletin...*, No. 3, Copenhagen, 1917.

[3] C. Döring, "Die Bevölkerungsbewegung im Weltkrieg. 1. Deutschland. Zweite erweiterte Bearbeitung", *Bulletin...*, No. 4, Copenhagen, 1919; 2. "Österreich und Ungarn", *Bulletin...*, No. 5, Copenhagen, 1919; 3. "35 Millionen Menschenverlust in Europa", *Bulletin...*, No. 6, Copenhagen, 1920.

[4] L. Hersch, "La mortalité causée par la guerre mondiale", *Metron*, Vol. 5, No. 1, 1925; Vol. 7, No. 1, 1927.

[5] F. Savorgnan, *La guerra e la popolazione*, Bologna, 1918.

[6] G. Frumkin, *Population Changes in Europe since 1939*, London, 1951.

Nations. *F. Burgdörfer*,[1] a German statistician, has studied the same question. A summary of data on losses is given in the book *Results of World War II*,[2] in the *World Almanac* and other publications.

In addition to statistical works on losses in various wars, repeated attempts have been made to summarise the diverse materials. The pioneer in this field was *Otto Hausner*, Austrian political leader and doctor; his book *Comparative Statistics of Europe* was published over 100 years ago. A few years later, a brief summary of war losses was made by the Frenchman *Paul Leroi-Beaulieu*. In 1888, a German doctor named *H. Frölich* wrote a special article on the loss of life in wars, citing reliable material alongside doubtful data.[3] At the end of the 19th century, summary data on war losses were given by the Frenchmen *G. Vacher de Lapouge* and *Charles Richet*, and the British statistician *Michael Mulhall*. In the 20th century, after World War I, a summary of losses covering all the biggest wars, beginning with the Seven Years' War and ending with the Balkan wars, was compiled by Professor *S. Dumas* of Lausanne.[4]

Of works in the Russian language mention should be made of the valuable study by Soviet scientists *L. S. Kaminsky* and *S. A. Novoselsky*,[5] which includes data on war losses between 1756 and 1918.

In conclusion let us note that in some cases war memoirs, dispatches, articles by military experts, war correspondents and other informed persons are also useful.

Utmost caution should be exercised in using information from literary sources. Even the most trustworthy authors sometimes make mistakes which greatly distort summary data. For example, *Friedrich Prinzing*, a well-known German statistician, in his book on epidemics in wars points out that 62,000 men died of various diseases in the

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[1] F. Burgdörfer, *Bevölkerungsdynamik und Bevölkerungsbilanz*, München, 1951.

[2] H. Arntz, *Die Menschenverluste im zweiten Weltkrieg.*

[3] H. Frölich, "Über Menschenverluste in Kriegen", *Streffleur's Österreichische militärische Zeitschrift*, Bd. I, 1888.

[4] S. Dumas, *Losses of Life Caused by War*, Oxford, 1923.

[5] L. Kaminsky and S. Novoselsky, *Poteri v proshlykh voinakh* (Losses in Previous Wars), Moscow, 1947.

Russian army from October 20 to December 14, 1812, giving as reference the book by *W. Ebstein.*[1] However, on turning to this book we find that Prinzing misquoted the original. Ebstein spoke not of the number of *dead* but the number of *sick*!

Some authors, for want of any exact data, cite their own estimates which are often far from the truth. For example, the French doctor *Chenu* estimated that 600,000 men in the Russian Army died of wounds and disease during the Crimean War but added a question mark after this figure. This figure has since been quoted in many books and journals as the official estimate of Russian losses, but without any question mark. Yet the strength of the entire Russian army was only 350,000 men and the number who died from disease was actually one-seventh of the figure mentioned by Chenu. It is to be regretted that this fantastic figure is circulated not only in foreign but also in Russian military literature.

In foreign literature one frequently comes across utterly fantastic figures for war losses, especially as regards Russia and the U. S. S. R. For example, the figure of 500,000 Russian soldiers who reportedly perished from gas attacks during the First World War (1914-1918) is often quoted in the literature. Yet the actual losses were one-seventh of this number. The foreign press has also frequently published false data on Soviet losses in the Great Patriotic War.

Some Soviet authors have also made mistakes. Professor *V. V. Bunak*, the well-known anthropologist, in his article "New Data on War as a Biological Factor" cites figures which are far from real. He states that the "Allied forces" lost 491,453[2] men from disease in the Crimean War, while actual losses were a mere fraction of this figure. Such mistakes show how important it is for the compiler of serious historical works to turn to primary sources for his information. For example, material on losses in the Crimean War cited in the book *The War*

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[1] W. Ebstein, *Die Krankheiten im Feldzüge gegen Russland (1812)*, Stuttgart, 1902.

[2] *Russky Yevgenichesky Zhurnal* (Russian Eugenics Journal), Vol. 1, Issue 1, 1922, p. 225.

Against Japan can in no way be regarded as original. In the basic work, *Centenary of the War Ministry*, we found detailed data on the Crimean War with references to the book by Stefanovsky and Solovyov. On turning to the latter we found there references to the book by Totleben. It is in fact the Totleben's book that gives all the detailed tables on losses in that war.

Although there is a relatively large amount of literature dealing with the influence of wars on the dynamics of European population, this in no way invalidates the need for a special study of this question.

First, the works of many authors contain, as will be subsequently demonstrated, wrong estimates. Second, and this is most important, monographs about the influence of wars in most cases are either limited to a mere summary of data from various sources, or give calculations for *one* country and for *one* epoch and do not present a general picture of the loss of life in wars of European countries over a long period.

It is this that has prompted us to make a special study of the influence of wars on the population of Europe. We fully realise that sources are often wrong or contradictory, that for a number of wars they are totally absent and that it is exceedingly difficult in many cases to sum up all this scattered material. However, we feel that even approximate figures on the loss of life in wars can give an idea of the harm they inflict on mankind.

PART II. BATTLE LOSSES

Chapter I. WORLD WAR I

§ 1. Losses Prior to World War I

Battle losses of soldiers and officers even prior to World War I were considerable. We estimate the losses of servicemen in 17th, 18th and 19th century wars as follows[1]:

	Killed soldiers and officers (thousands)
Thirty Years' War (1618-48)	180
Northern War (1700-21)	70
War of the Spanish Succession (1701-13)	235
War of the Austrian Succession (1741-48)	120
Seven Years' War (1756-63)	140
Turkish wars in the 18th century *	275
Revolutionary wars of France ** (1792-1800)	290
Napoleonic wars (1805-15)	550

* Turkish wars against Russia and Austria.
** Excluding the Vendéen war.

In the subsequent period, corresponding to the epoch of industrial capitalism, wars in Europe were primarily of a local nature and losses were thus considerably reduced.

The number of killed between the Battle of Waterloo and World War I was as follows:

	Years	Total killed (thousands)
Russo-Turkish War	1828-29	25
Crimean War	1853-56	53
Italian War	1859	10

[1] For details of these calculations see full Russian edition of this book, pp. 35-138.

	Years	Total killed (thousands)
Austro-Prussian War	1866	11
Franco-Prussian War	1870-71	57
Russo-Turkish War	1877-78	34
Russo-Japanese War	1904-05	81
Balkan War	1912-13	122

In other wars between European states less than 10,000 servicemen were killed during this period.

Losses in wars outside Europe were much greater. Large numbers perished in the 19th century during wars in China and South America, and in a number of colonial wars, in the course of which the local population was ruthlessly massacred by the invaders. In addition, some 134,000 soldiers and officers were killed in the American Civil War.

However great these figures may seem, they pall to insignificance beside the toll claimed by the two world wars.

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Though World War I was fought in a period when accounting and statistics had reached a high level, no precise figure can be given for losses because of the great diversity in data. Let us therefore examine the available information on losses in that war by countries and try to estimate the number of soldiers and officers killed on the battlefields of that immense carnage.

§ 2. Losses of the Entente

Russia. It is rather difficult to ascertain Russia's losses in World War I. Available statistics are highly contradictory, incomplete and frequently unreliable. As a result, the world press printed fantastic figures of Russia's losses in the war of 1914-18. It is, therefore, necessary to make a critical examination of the main sources and then estimate as precisely as possible the number of Russian soldiers and officers killed in that war.

In contrast to some other World War I belligerents, Russia's Main Army Headquarters kept a regular account of losses broken down into appropriate categories. These

data were summed up by the Information Department at the Main Army Headquarters and published in the *Works of the Commission for the Study of the Sanitary Consequences of the War*. According to these data, 511,068 soldiers and officers of the Russian Army were killed in the war.[1] But the article in which this figure is cited points out that it cannot be regarded as complete. During period of big reverses at the fronts, such as the defeat of the Second Army commanded by General Samsonov and of the First Army of the North-Western Front (owing to the betrayal of General Rennenkampf), data on losses were incomplete. Therefore, the figure given above cannot be regarded as reliable.

Subsequently, the figures collected at the Main Army Headquarters were processed by the Central Statistical Board of the U.S.S.R. (C.S.B.) and published first in 1924 in the handbook *National Economy of the U. S. S. R. in Figures*, then in the handbook *Russia in the World War of 1914-18 (Figures)*, issued by the Central Statistical Board in 1925. According to these summary data, 626,440 Russian soldiers and officers were killed. The losses were grouped according to rank, branch of the service and years. In the commentary on the tables it was pointed out that "information on battle losses was obtained by the C.S.B. by summarising dispatches of the former Central Administration of the General Staff on the killed, wounded, shell-shocked and poisoned by gas, received direct from the theatre of hostilities.[2]

There are grounds for assuming that this summary was quite superficial, as can be judged by materials published in 1942[3] quoting War Ministry reports on annual war losses. For all that the data provided by the Main Army

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[1] L. I. Sazonov, "Losses of Russia in the War of 1914-19", *Trudy komissii po obsledovaniyu sanitarnykh posledstvi voiny 1914-1920 gg.* (Works of the Commission for the Study of the Sanitary Consequences of the War of 1914-20), Moscow, 1923, p. 168. (Hereafter *Trudy komissii....*)

[2] *Rossiya v mirovoi voine 1914-18 gg. (v tsifrakh)* [Russia in the World War of 1914-18 (Figures)], Moscow, 1925, p. 15. (Hereafter *Rossiya v mirovoi voine....*)

[3] *Sanitarnaya sluzhba russkoi armii v voine 1914-1917 gg.* (Medical Service of the Russian Army in the War of 1914-17), Kuibyshev, 1942. (Hereafter *Sanitarnaya sluzhba russkoi armii....*)

Headquarters required verification. As regards the correctness of the totals there is no doubt that the number of killed, according to the data of the Main Army Headquarters, was considerably underestimated since only soldiers and officers definitely known to be killed were included in this group. Moreover, a large part of the reports was lost during retreats. The significance of this can be judged by comparing the reported number of killed by years.

Years	Killed
1914	42,907
1915	269,699
1916	261,097

Losses in 1915 and 1916 are reported to be six times greater than in 1914, although it was in that year that many bitter and hard battles were fought. This difference cannot be explained solely by the fact that hostilities in 1914 lasted only five and a half months but must be attributed to the loss of documents during the retreat from East Prussia. This comparison of the number of killed per year should be considered as proof that the figure of 626,440 killed is greatly underestimated.

Data supplied by military medical agencies can serve as another source of Russian Army's losses. The report of the Chief Military Medical Inspector received by the G.H.Q at the beginning of 1917 pointed out that from the beginning of the war up to September 1, 1916, 562,644 soldiers and officers [1] were killed or died prior to being admitted to medical institutions. Data for a later period provided by the same department are quoted in an article by *Avramov* which is a very valuable document on losses in the First World War.[2] Avramov sets the number of killed at 664,890 or 38,000 more than the figure published in the handbook and 154,000 more than the number given by the Main Army Headquarters. But even this figure does not fully reflect the true losses. It does not cover data for the Caucasian front and losses after October 1, 1917; nor does it include data on losses during retreats. Avramov

[1] *Trudy komissii...*, p. 163.

[2] V. Avramov, "Victims of the Imperialist War in Russia", *Izvestiya Narodnogo komissariata zdravookhraneniya* (Annals of the People's Commissariat of Public Health), No. 1-2, 1920. p. 41.

himself thinks that an adjustment of 10 per cent should be made. But this arbitrary adjustment, as we shall subsequently demonstrate, is inadequate in giving us a full picture.

An even higher figure of killed is given in the statement by a department of Main Army Headquarters in reply to an inquiry by General Janin, head of the French Military Mission, about the Russian Army's losses and reserves. In that statement dated October 10, 1917, the number of killed and missing is given as 775,369,[1] i.e., 110,000 more than Avramov's figure. The same number of killed and missing is cited in the *Balance of Manpower Expenditure*, compiled according to data of the former G.H.Q.[2] It is worth noting that in the reply to General Janin's inquiry losses are given for the period from the outbreak of the war up to May 1, 1917,[3] while in the C.S.B. handbook and the *Works of the Commission* these figures cover the period up to September 1, 1917.

The inclusion of the missing in the total number of the killed should not be considered as exaggerating the number of killed. Provided there is a separate column for "prisoners of war", the missing in most cases can be justifiably placed in the column of "killed".

Thus we are left with five official or semi-official figures for the number of Russian soldiers and officers killed in World War I: 511,068, 562,644, 626,440, 664,890 and 775,369.

Which of them should be preferred as being closest to reality? We hold that all these figures underestimate the actual number of killed and it is regrettable that some authors have made use of these misleading figures.

Binshtock, for example, based his calculations on Avramov's figure, adding to it only 200,000 missing.[4] *Sazonov* proceeded from the figure of 600,000 killed.[5] *Volkov* also considered Avramov's calculation as the "figure which has been most exactly established, not merely by the use of

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[1] *Trudy komissii...*, p. 150.
[2] *Rossiya v mirovoi voine...*, p. 20.
[3] *Sanitarnaya sluzhba russkoi armii...*, p. 459.
[4] V. I. Binshtok, "Military Losses of Russia in the War of 1914-18", *Trudy komissii...*, p. 149.
[5] L. I. Sazonov, op. cit., *Trudy komissii...*, p. 165.

data from military reports, but also by a critical analysis of this data". [1]

If we, like these historians, were to base our investigations on one of the five figures cited above, we should in any case take the highest ones since the inclusion of the missing somewhat reduces the underestimation of the number of killed. Moreover, losses after May 1, 1917, should also be taken into account. According to data given by the Bureau of Losses, Statistical Department of the Red Army, 22,457 soldiers and officers were killed from May to November 1917. Together with the losses in December 1917 and January and February 1918, it may be assumed that the total number of killed from May 1917 to the signing of the Brest Peace Treaty was not less than 30,000. To this should be added naval losses which, although relatively insignificant, amounted to 2,223 killed and dead in the Baltic Fleet and, together with the Black Sea and Siberian Fleets, totalled 3,074 [2] killed.

A more considerable adjustment should be made in view of the underestimation of losses in 1914. That there really was such an underestimation is evident from a comparison of the average monthly losses between 1914 and 1916, calculated on the basis of War Ministry reports, [3] which differ little from the figures published in the C.S.B. handbook.

Average Monthly Casualties of the Russian Army in 1914-16
(thousands)

Years	Killed	Taken Prisoner	Wounded	Total
1914	8	11	46	65
1915	23	82	102	207
1916	22	125	77	224

It is a fact that the Russian Army suffered considerable losses in killed, wounded and prisoners during the first six months of the war. Yet, according to War Ministry

[1] Y. Volkov, *Dinamika narodonaseleniya SSSR za 80 let* (Dynamics of the Population of the U. S. S. R. for 80 Years), Moscow and Leningrad, 1930, p. 52.

[2] *Rossiya v mirovoi voine...*, pp. 30, 36.

[3] *Sanitarnaya sluzhba russkoi armii...*, pp. 92, 97, 142. The average monthly losses have been calculated by us. In 1914, there were 5.5 months of hostilities.

reports, average monthly losses in 1914 were some 65-70 per cent lower than in 1915-16. This indicates that in the first months of the war the system of recording casualties was not fully organised and that a considerable number of the reports was lost. That the losses in 1914 were much higher than reported by the War Ministry is also demonstrated by information from the Moscow Central Evacuation Committee showing that the average monthly number of wounded evacuated in 1914 was 73,700 as compared with 70,200 in 1915. [1]

The underestimation of the number of killed in 1914 is also revealed by the incredible fact that the number of wounded is six times greater than the number of killed. The average monthly number of killed in 1915, as seen from the table, was 15,000 greater than in 1914. If we take the average number of killed per month in 1915 as the average for 1914, this will give us some 83,000 men more than the reported figure. Since the losses of the Russian Army in 1914 were greater than in 1915, it may roughly be considered that in 1914 the number of killed should be increased by at least 100,000.

Russia's losses in the 1914-18 war should thus be estimated as follows:

	(thousands)
Killed and missing up to May 1, 1917 . . .	875
Killed from May 1, 1917 to March 1918 . .	30
Killed in the Navy	3
Total . .	908

Can this figure be considered closer to reality than the others? For this additional proof is necessary. It should be noted that foreign authors who studied Russia's losses in World War I cite entirely different figures. For some reason they ignore all the above-mentioned official and semi-official figures of losses and base their calculations on material that is doubtful, to say the least.

The British War Office, for example, gives the figure of 1.7 million killed, referring to a telegram sent by an unknown person from Petrograd to Copenhagen on

[1] *Rossiya v mirovoi voine...*, p. 25.

December 20, 1918.[1] This figure was quoted in the French journal *Drapeau bleu* in 1919 and later reprinted in many other publications. But not a single one of them even hints at the origin of this figure.

Some foreign authors arrive at even higher figures. Thus *Christian Döring*[2] raises the number of killed to 2.5 million taking as a basis an estimate of 1,498,000 killed in the first two years of the war (for more details, see pp. 193-94) and making an extrapolation for the subsequent period. Still more doubtful are the calculations of Russia's losses made by *Ernest Bogart*, a professor at the University of Illinois. Referring to some official and semi-official sources, he estimates the number of killed in the Russian Army at the amazingly precise figure of 2,762,064! He immediately explodes the illusory "precision" of this figure, considering it necessary to add to it half of the total number of prisoners and missing.[3] Bogart forgets that if the number of missing is combined under one heading with prisoners of war, it cannot be assumed that the percentage of killed among them is so high. According to Bogart, the number of prisoners and missing totalled 2.5 million. By adding 1,250,00 to 2,762,064 he gets a "new" and similarly "exact" figure of killed in the Russian Army—4,012,064 people. Despite the absurdity of Bogart's figures, they have gained currency and have even been included in some encyclopaedia's.

All these data show that estimates of killed in the Russian army cover an extremely wide range—from 500,000 to 4,000,000. This makes it necessary to corroborate the figure of 900,000 killed we gave earlier by additional proof based on other criteria. Some military historians take the proportion between the number of wounded and killed as the criterion for determining the number of killed. This, for example, was the method used by *N. N. Golovine*, a

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[1] *Statistics of the Military Effort of the British Empire During the Great War 1914-1920*, London, 1922, p. 353.

[2] C. Döring, *35 Millionen Menschenverlust in Europa*, S. 4.

[3] E. Bogart, *Direct and Indirect Cost of the Great World War*, New York, 1920, p. 272. The figure of 2.5 million killed was also current in the Russian press. It was, for example, cited by Z. P. Solovyov in his article on the cost of the war in *Vrachebnaya Zhizn* (Medical Life) No. 1, 1917, p. 4.

general of the tsarist army and professor of the Academy of the Russian General Staff. In his study of the Russian Army during World War I there is a special chapter on losses in which he makes the following calculation of the number of killed.

According to Avramov's data there were 3,813,827 wounded. Golovine makes an allowance of 10 per cent for underestimation and obtains a figure of 4.2 million wounded. By analysing material on French Army losses, Golovine establishes that the number of wounded was 3.3 times greater than the number of killed; he divides 4.2 million by 3.3 and obtains the figure of 1,260,000 or, to be more exact, 1,273,000 which he rounds off to 1.3 million. This, according to Golovine, is the actual figure of killed, which in his subsequent account he sets out to substantiate. Golovine holds that in addition to the 626,000 reported killed (the figure given in the C.S.B. handbook) there were also 674,000 unreported killed covered by the column "missing". Wishing to demonstrate that the "missing" group is sufficiently large to include the 674,000 unreported killed, Golovine again proceeds from proportions in the French Army. At the Paris Peace Conference Tardieu stated that French killed and missing totalled 800,000 people. On the other hand, Huber reported that 253,000 of the missing were not found and should be included among the killed which is 32 per cent of the 800,000. By applying this percentage to Russian data on the number of prisoners and missing (3,638,271) Golovine obtains a figure of 1,164,250, i.e., almost twice as large as the 674,000 unreported deaths. Consequently, the number of missing is sufficiently large to include all the unreported killed.

But Golovine does not stop at this point. He makes a separate estimate of the number of prisoners and deducts it from the 3,638,271 obtaining a more reliable number of missing, namely 1.2 million.[1] This figure is sufficiently large to include the 674,000 unreported killed. However for some reason Golovine makes no mention of the number of missing quoted in the C.S.B. handbook.

[1] N. Colovine, *The Russian Army in the World War*, New Haven, 1931, pp. 86, 87-93.

The main figure cited in Golovine's calculation, 3,638,271 prisoners and missing, is broken down as follows:

Prisoners	3,409,433
Missing	228,838
Total . . .	3,638,271

This number of missing would not satisfy Golovine since it could not include the unreported killed, which is three times bigger. True, the figure of missing given in the handbook is doubtful and in no way tallies with the War Ministry reports. According to these reports, in 1914 there were 131,000 missing and in 1915, 383,000.[1] Thus, in the first 18 months of the war, the number of missing was 514,000 or 2.5 times greater than the figure given in the handbook for the entire period of the war. Golovine pays great attention to ascertaining the number of wounded, because he deduces from it the number of killed. But it would be wrong to claim that the number of wounded in the Russian army can be expressed by Avramov's figure plus an additional 10 per cent. To ascertain the number of wounded is perhaps even more difficult than to determine the number of killed because here serious methodological obstacles arise. First, a considerable number of wounded were treated in frontline hospitals and medical posts, and information about them was far from complete. Second, some of the wounded were admitted two or more times to medical institutions owing to repeated wounds. Third, wounded were frequently transferred from one hospital to another, and this could also be a source of double count. Fourth, mortally wounded brought to hospitals were put in the category of wounded and not of killed.

To apply to the Russian Army the ratio of wounded and killed in the French Army one has to be certain that the system of keeping records of the wounded and the organisation of the military medical service in France were identical to those in Russia, and also that Avramov's figures for their range and coverage conform to the number of wounded Frenchmen, on the basis of which the ratio of 3.3 wounded per one killed was deduced. The slightest

[1] *Sanitarnaya sluzhba russkoi armii...*, pp. 92, 97.

change in the numerator or denominator sharply alters this ratio. Golovine himself points out that if the number of wounded is not taken in relation to the number of killed, but to the number of killed and dead from wounds, this ratio would decline from 3.3 to 2.39 (in the German Army it was 2.35).[1] If the mere addition of the number of dead from wounds will so radically change the ratio between the number of wounded and killed, it is easy to imagine how this ratio will change depending on the method of calculating the number of wounded, which is so difficult. This convinces us that Golovine's methods of calculation cannot be considered satisfactory and that the number of killed must be verified in some other way—for example, on the basis of losses on separate fronts.

For the German Army, losses on separate fronts can be established on the basis of the following data published in the main medical report on the war of 1914-1918[2]:

Losses of the German Army in 1914-18 by Fronts
(thousands)

Years	Fronts					
	Western			Eastern		
	Killed	Missing	Total	Killed	Missing	Total
1914-15	160.9	170.0	330.9	72.0	68.4	140.4
1915-16	114.1	96.3	210.4	56.0	36.0	92.0
1916-17	134.1	181.6	315.7	37.0	36.4	73.4
1917-18	181.8	175.3	357.1	8.8	2.5	11.3
Total	590.9	623.2	1,214.1	173.8	143.3	317.1

The overwhelming majority of missing were never found and should be added to the number of killed. Thus, in battles with the Russian Army the Germans lost more than 300,000.

[1] N. Golovine, op. cit., p. 84.

[2] *Sanitätsbericht über das deutsche Heer ... im Weltkriege 1914-1918*, Bd. III, Berlin, 1934, S. 151 (Appendix). These data show that German losses on the Eastern front were only one-fourth of those on the Western front.

The Austro-Hungarian Army also sustained big losses. Distribution of losses by fronts was as follows:

Losses of the Austro-Hungarian Army by Fronts in 1914-18 *

Fronts	Number of killed, wounded and prisoners (thousands)
Russian	2,724
Italian	1,478
Rumanian	79
Balkan	295
French	6
Total	4,582

* A. De Lazari, *Mirovaya imperialisticheskaya voina 1914-1918.* (World Imperialist War of 1914-1918), Moscow, 1934, p. 80.

The share of the Russian front in the total losses of the Austro-Hungarian Army was approximately 60 per cent. Altogether Austria-Hungary lost 727,000 in killed on the battlefield (see pp. 68-69). If we take this percentage and apply it to losses in battles against the Russian Army, we find that the Austro-Hungarian Army lost 450,000 killed at the Eastern front.

Turkish troops, too, fought against the Russian armies. It may be roughly estimated that about two-thirds of the Turkish dead perished from Russian arms, that is, about 150,000 of the total 250,000 (see pp. 69-70). This number also includes losses of two Bulgarian divisions who fought against the Russian armies.

As a result, we arrive at a figure of 900,000 men killed on the fields of battle against the Russians. [1]

The proportion of losses on the Western front can be judged from the following figures. The French lost more than 900,000 men on the battlefields. The losses of the British in France exceeded 500,000. To these should be added 50,000 killed from the French colonial forces, 36,000 Americans and about 50,000 Belgians, Portuguese, and soldiers of other armies which fought against the Ger-

[1] The German Army also sustained some losses in battles against the Rumanian Army, but these were insignificant

mans. In World War I, the fields of Flanders and France were drenched by the blood of some 1.6 million soldiers and officers of the Entente armies. The Germans, on the other hand, lost only 1.1 million there. Consequently, German losses on the Western front were 33 per cent lower than those of their enemies.

In the light of these figures it is difficult to believe that on the Eastern front almost a reverse ratio existed, if we are to take the figure of Russians killed given by Avramov. Even the figure we hazarded of 900,000 killed seems an underestimation considering this analysis of enemy losses. Evidently the number of unreported killed in the Russian Army was much higher than we assumed. As regards the large number of killed, there was no reliable information about their death and they were listed among the prisoners. This is confirmed by the exaggerated figure of prisoners (3.5-4 million) given in reports of G.H.Q. and other organisations. The actual number of Russian prisoners did not exceed 2.5 million. (This point is discussed in detail further on.) It may be assumed beyond all doubt that several hundred thousand killed were included among the prisoners.

We mentioned earlier that for the 900,000 Germans, Austrians, Hungarians and Turks killed there were, according to the calculations, 900,000 Russians killed (a ratio of 1 : 1). At the same time for 1.1 million German losses there were 1.6 million allied losses on the Western front (a ratio of approximately 3 : 4). If we take the same ratio for the Russian front, the estimated *number of Russians killed rises to 1.2 million*, i.e., will be 300,000 bigger than given in the *Balance of Manpower Expenditure* compiled by the G.H.Q. in 1917 plus our additions. This figure, in our opinion, is much closer to reality than the figures of 500,000 or 600,000, which are so often quoted, or the fantastic figures of 3-4 million reported in the foreign press.

France. The French suffered heavy losses in the 1914-18 war. They were repeatedly discussed in the Chamber of Deputies and data on them can be drawn from documents submitted to the Chamber.

The official declaration of losses was made on December 26, 1918, when a spokesman of the War Ministry

announced that the French Army had lost 1,385,000 in killed, dead and missing. Subsequently, this figure was repeatedly revised, either downward as a result of missing men being found, or upward owing to the death of severely wounded and sick after the war. The latest estimate, drawn up on the basis of card indexes as of August 1, 1919, contained the following data:

French Losses in the 1914-18 War *
(thousands)

Categories of servicemen	Died	Missing	Total
Army			
French soldiers	1,010.2	235.3	1,245.5
North-African soldiers **	28.2	7.7	35.9
Soldiers of French colonial armies	28.7	6.5	35.2
Foreign Legion	3.7	0.9	4.6
Total	1,070.8	250.4	1,321.2
Officers	34.1	2.5	36.6
Army total . . .	1,104.9	252.9	1,357.8
Navy			
Sailors	6.0	4.9	10.9
Officers	0.3	0.2	0.5
Navy total	6.3	5.1	11.4
Army and Navy total .	1,111.2	258.0	1,369.2
In addition, died from November 11, 1918 to June 1, 1919	28.6	—	28.6
Total, including deaths after the war	1,139.8	258.0	1,397.8

* M. Huber, *La population de la France pendant la guerre*, Paris, 1931, p. 414.

** Soldiers from Algeria, Morocco and Tunisia, whom French statistics for some reason singled out from among the group of «colonial armies».

Thus, the total number of dead and missing was 1,398,000.[1] Since the missing were subsequently not found it is justifiable to include them among the dead. Deducting from this total those who died of disease (179,000), in captivity (19,000), from accidents (14,000), wounds (232,000) and poison gas (8,000) we find that *altogether 898,000 French soldiers and officers and 48,000 soldiers of the French colonial forces perished on the battlefield.*

British Empire. Statistics on the losses of the British armed forces in World War I have been published in detailed summaries in the *Statistics of the Military Effort of the British Empire During the Great War 1914-1920*, and also in a large series of official publications on the history of that war.

The statistical report of the War Office gave the following summary data on losses suffered by the British Empire[2]:

Parts of the Empire	Soldiers and officers who perished in the 1914-18 War
British Isles (including the Navy)	702,410
India	64,449
Canada	56,639
Australia	59,330
New Zealand	16,711
Union of South Africa	7,121
Newfoundland	1,204
Other territories	507
Total	908,371

This number includes not only killed but also missing which are officially classed among the dead. Although this method of computation was used in other countries too (for example, in France and Russia), some authors hold that this category of losses should not be included among the dead.

Professor *Greenwood* in his studies of British casualties in the 1914-18 war, for example, takes only the number of

[1] Some authors cite different figures: 1,355,000 killed and dead in the Army and 10,700 in the Navy; giving a total of 1,365,700, of whom 68,000 are from the colonial armies (Ch. Gide et W. Qualid, *Le bilan de la guerre pour la France*, Paris, 1931, p. 98).

[2] *Statistics of the Military Effort of the British Empire...*, p. 237.

killed, those who died from wounds, in captivity and from disease; namely 724,000 in the Army and 48,000 in the Navy, giving a total of 772,000. In his calculations, Greenwood proceeded from data cited in the official history of the war issued in 1931. But this publication gives, besides prisoners, also a considerable number of missing. The question arises who *are* the missing listed under this column some 12-13 years after the end of hostilities? Naturally, there is every reason for considering them dead. It is difficult to understand why Professor Greenwood regards so large a number of soldiers and officers as living. In France, six months after the end of the war, all missing were classed as dead.

The summary volume of the *History of the Great War Based on Official Documents* gives the following figures of killed and missing British soldiers and officers (broken down by fronts):

Killed and Missing Soldiers and Officers of the British Army 1914-1918 *

(thousands)

Fronts	Killed	Missing	Total
France and Flanders	381	145	526
Italy	1	0	1
Macedonia	3	2	5
Dardanelles	22	7	29
Egypt and Palestine	7	2	9
Mesopotamia	11	2	13
Africa (excluding Egypt)	3	0	3
Total	428	158	586

* *Casualties and Medical Statistics of the Great War*, London, 1931, p. 12.

To this figure should be added the 20,000 naval casualties making a total of 606,000 killed and missing. Since the victims of chemical warfare are singled out by us in a separate column we should deduct from the total the number who perished from poison gas prior to being admitted to medical institutions. Proceeding from the total number of 8,000 (see p. 82) who died from poison gases, and considering (on the basis of Russian and other data) that three-fourths of them died in hospitals, we estimate that 2,000 people died from gas poisoning at the

frontline. Thus the *total number of killed on land and sea was 604,000.*

This number can be distributed as follows:

Parts of the British Empire	Killed (thousands)
Great Britain	485
Canada (including Newfoundland)	41
Australia	40
India	24
New Zealand	10
Union of South Africa	4
Total	604

Italy. It is difficult to obtain reliable data on Italian casualties in the 1914-18 war. Some sources gave a figure of 364,000 killed and dead,[1] whereas according to other sources they were as high as 750,000. One way of estimating the casualties is provided by the number of pensions issued to families of men who perished in the war—there were 580,700 of them as of February 28, 1921.[2] This number conforms approximately to the number of dead 575,000 given by the Italian statisticians *Gini* and *Livi.*[3] Basing our calculations on the figure 578,000—the average of the two estimates—and deducting from it the number who died from wounds (47,000, see pp. 76-77), disease and accidents (85,000, see p. 157), and those who died in captivity (60,000), according to data of the Italian statistician *Mortara*[4], we obtain a figure of 386,000 Italians killed on the battlefield. An additional deduction of 5,000 who died from poison gas should be made giving us a *total of 381,000 killed in the Italian Army and Navy.*

Belgium. The divergence in the estimate of casualties is greater for Belgium than for any other country. While Bogart mentions a figure of 267,000 killed, nine other sources give a total of 14,000. Döring in his first computation also presented an obviously exaggerated figure of

[1] L. P. Ayres, *The War with Germany. A Statistical Summary*, Washington, 1919, p. 119.

[2] *Enquête sur la production*, t. IV, Paris, 1924, p. 37.

[3] Gini e Livi, "Alcuni aspetti delle perdite dell' Esercito Italiano illustrati in basi ai dati degli *Uffici Notizie*", *Metron*, Vol. IV, No. 2, p. 307.

[4] S. Dumas, *Losses of Life Caused by War...*, p. 142.

115,000 killed which Hersch justifiably considers utterly fantastic.

More reliable figures for the Belgian casualties are quoted in the *Statistics of the Military Effort of the British Empire*, namely, 13,716 killed and dead soldiers and officers as of November 11, 1918. There were also 24,456 missing which can be included among the losses. If we deduct from the total number of killed and dead (38,172) those who died in captivity (1,000), from disease (2,000) and wounds (3,000), we discover that some *32,000 Belgians were killed on the battlefield.*

Serbia and Montenegro. It is particularly difficult to ascertain the number of killed in this case. Data on World War I casualties in Serbia published in various sources differ greatly. According to the American War Department, Serbian casualties amounted to 45,000 men [1] and Montenegrian to 3,000. These figures gained wide currency and were reproduced in various almanacs, encyclopaedias, handbooks, etc. On the other hand, the magazine *La Serbie*, printed in French outside Serbia, quoted the figure of 690,000 killed and dead soldiers of the Serbian Army. [2] This figure was taken by Döring as the basis of all his calculations and was later published in the German statistical handbook for 1922-23. Bogart gives an even higher figure. According to his data, which, for some reason, he regards as official, the number of killed and dead from wounds was 707,343. The absurdity of this figure is beyond doubt. The number of men of call-up ages in Serbia at the time did not exceed 1,000,000, while the actual number of mobilised was about 750,000. How in this case could the number of killed exceed 700,000?

Besides these two extreme figures, there is a considerable number of intermediary ones. The French *Drapeau bleu* quoted 100,000 men while the American *Ayres* raises it to 125,000. Of interest in this context is the official statement of the Yugoslav Royal Government in reply to an inquiry of the International Labour Office. It stated that the number of killed and dead in the Serbian Army was

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[1] The same figure was also given in the British *Statistics of the Military Effort of the British Empire...*, p. 353.

[2] *La Serbie*, No. 14, 1919.

365,164 and in the Montenegrin Army, 13,325,[1] a total of 378,489. However, as can be seen from the following facts, these figures are not very reliable: 1) the population of Montenegro was one-fifteenth of that of Serbia, while Montenegro suffered one-thirtieth of the total losses; 2) the ratio between the casualties of soldiers and officers was 100 : 1 in Serbia and 40 : 1 in Montenegro. The ratio in Serbia is unjustifiably high and gives us grounds to believe that the overall number of killed and dead soldiers in the Serbian Army was exaggerated.

Not trusting the official figures of the Yugoslav Royal Government, Hersch calculated the casualties of Serbia independently. According to a census made at the end of 1910, the excess of males over females in Serbia was almost 100,000, while ten years later the census on the same territory registered almost a similar excess of females. Proceeding from this, Hersch sets the higher mortality of men between 1911 and 1920 at 205,000. Adding South Serbia, the total decline of men will be 248,000 and, after deducting the casualties in the Balkan wars, 200,000. To this figure Hersch adds the number of men who died from epidemics which affected the entire population and therefore did not influence the sex ratio. Hersch thus quotes 325,000 as the total losses of Serbia and Montenegro.

We have made some calculations of our own. The population of Northern Serbia should have grown to approximately 3,450,000 by 1921 had there been no Balkan wars and the World War of 1914-18. In actual fact, according to the 1921 census, there was a population of only 2,650,000. Thus, the population shrinkage from the wars was 800,000. About 300,000 can be credited to the decline in births during the war years, leaving 500,000 in human losses. The higher mortality of the civilian population, which suffered greatly from starvation and epidemics, can be set at between 200,000 to 250,000. Consequently, the military losses amounted to 250,000-300,000 men and, taking account of Southern Serbia and Montenegro, to some 300,000 or 350,000. If we deduct the losses during

[1] *Enquête sur la production. Rapport général*, t. IV, Paris, 1924, p. 36.

the Balkan wars, the total number of killed and dead in the 1914-18 war could hardly exceed 300,000. This figure was taken as the basis of our computations. Deducting those who died in captivity or from diseases and wounds, the *total number of killed in Serbia and Montenegro can be estimated at approximately 140,000.* Any larger figure would be quite unjustified: we should bear in mind that the number of wounded and prisoners in this war was 3-4 times greater than the number of killed. Indeed, according to a report of the Yugoslav Government there were as many as 164,000 war invalids [1] in Serbia.

For *Rumania* there is also no sufficiently reliable data on First World War casualties. The figures on the number of Rumanian soldiers killed quoted in the press were mere estimates, which, moreover, greatly differed. For example, Döring names a figure of 159,000 killed and dead, borrowing it probably from the bulletin of the Union of French Patriots, while the French paper *Le Temps* of November 5, 1919, spoke of 400,000 killed and missing. *Lawson* of Britain also quotes this figure. A similarly high figure is mentioned by Bogart who, with enviable "precision", sets the number of killed at 339,117. [2] Since a total of one million men were mobilised into the Rumanian Army and Rumania entered the war only in 1916, Bogart's figure is absolutely incredible. Rumania did not participate in the war for any length of time and ceased fighting when her army was routed. A figure of 339,117 killed could only be true of an army of several million men, which Rumania did not have.

The figure reported by the Rumanian Government, in reply to a questionnaire from the International Labour Office seems much more reliable. The Rumanian Government estimated the number of killed and dead soldiers and officers of the Rumanian Army at 250,000. If we set the number who died in captivity at 40,000, from disease at 30,000 (see p. 157) and accidents at 3,000, losses during hostilities would amount to 177,000. Even assuming that one-seventh of the battle losses died from

[1] *Ibid.*, p. 67.
[2] E. Bogart, op. cit., p. 272.

wounds, we are left with a *total number of killed of 152,000.*

Greece entered the war on the side of the Entente only at the end of 1916 and her casualties, according to different sources, range from 7,000 to 15,000 killed. The figures given by Bujac are the most exact and reliable. According to his data, 8,467 Greek soldiers and officers were killed in Thrace and Macedonia. In addition, over 3,000 were missing.[1] Considering that one-fifth of this number perished, the total number of killed was 9,000.

Of all the European belligerents, *Portugal* took the least part in hostilities, and her losses were insignificant. A total of 7,222[2] were killed and died including 1,689 on the European arena and 5,533 in Africa (Angola and Mozambique). Assuming that the number who died from diseases and wounds was 2,000, we estimate that about *5,000 Portuguese were killed.*

Japan suffered the smallest losses. Throughout the war *300 Japanese soldiers and officers were killed.*

To sum up the total losses of World War I let us also mention the losses of the *United States*, which formally participated in the war for 19 months. In actual fact, however, the U.S. Army sustained more or less sizable losses only from July to November 11, 1918, when 34,000 soldiers and officers were killed. Altogether *36,700 soldiers and officers of the U.S. Army were killed in World War I.*[3]

Thus, the following number of soldiers and officers in the Allied armies were killed in battle during the 1914-18 War:

Number of Killed in the 1914-18 War Among Countries of the Anti-German Bloc

Country	Thousands
Russia	1,200
France	898
Great Britain	485

[1] Bujac, *Les campagnes de l'Armée Hellénique, 1918-1922*, Paris, 1930, p. 339.

[2] *Statistics of the Military Effort of the British Empire...*, p. 352.

[3] *Medical Department of the United States Army in the World War*, Vol. XV, Part II, 1925, p. 1027.

Country	Thousands
Italy	381
Rumania	152
Serbia and Montenegro	140
British Dominions and India	119
French colonies	48
U. S. A.	37
Belgium	32
Greece	9
Portugal	5
Japan	0.3
Total	3,506.3

The table shows that Russia and France suffered the biggest losses among the countries of the anti-German bloc. British and Italian losses were half those of France, although these three countries differed little in size of population. As for the United States, the number of American soldiers and officers killed was only 1 per cent of the total killed in the countries of the anti-German bloc.

§ 3. Losses of the Central Powers

Germany. The German Central Information Office on War Casualties estimated that at the end of 1918 the number of killed soldiers and officers of the German Army was 1,621,034, according to the official casualty lists. But for several years after the war this figure kept growing as it was established that many of the missing, gravely wounded and sick had died. By October 31, 1922, the number of dead was increased to 1,821,922.[1] This figure did not include 170,000 missing men which, if added, raises the total losses to 2,030,000.[2]

The most complete total of war losses was published much later, in 1934, in the third volume of the special medical report. The interesting data cited there show how, as a result of ascertaining (after the end of the war) the fate of individual soldiers and officers, the figures of war losses were increased.

[1] K. Oldenberg, "Der Bevölkerungsverlust im Weltkrieg", *Schmoller's Jahrbuch*, H. 3, 1925, S. 80.

[2] *Wirtschaft und Statistik*, May 10, 1924, S. 283.

Fifteen years after the end of hostilities, the number of killed and dead was still being specified and raised. Casualties in the navy (34,836) and in the colonies (1,185) bring up the total of killed and dead to 1,936,897. By 1934, 100,000 men remained missing and could therefore be classed among the dead. This brings the number of perished German soldiers and officers up to 2,036,897.

The number of killed in battle cannot be ascertained on the basis of direct data given in corresponding reports owing to the large number of missing. Therefore, the only way to arrive at this figure is to deduct the losses of various categories from the total war losses.

Category of Losses	Thousands
Died from wounds	320
" from poison gas	3
" from diseases	166
" in captivity	56
" from accidents	14
Suicides	5
Total	564

Deducting 564,000 from the total number of dead 2,037,000, we obtain the number of killed in battle, 1,473,000. Only in this way can we arrive at the correct figure of killed in battle. Thus the figure of those killed in battle (772,687) mentioned in the report is almost 50 per cent below the figure computed by us. [1]

Austria-Hungary. According to data reported by *Kerchnawe*, 905,000 killed and dead soldiers of the Austro-Hungarian Army were registered towards the end of the war. In addition 181,000 men were still missing at the end of 1919. Adding them to the number of registered deaths, Kerchnawe obtained the figure of 1.1 million losses. In our opinion, this figure most correctly reflects Austro-Hungarian losses; of this number 300,000 died of wounds and diseases, [2] 70,000 died in captivity and 3,000 from

[1] *Sanitätsbericht über das Deutsche Heer...*, Bd. III, S. 139.

[2] L. Grebler and W. Winkler, *The Cost of the World War to Germany and to Austria-Hungary*, New Haven, 1940, pp. 144, 148. It is worth noting that in a study published in 1919 Winkler stated that, according to official figures, there were 905,299 killed and 837,483

gas poisoning. Consequently, the number of killed on the battlefields was 727,000. Nevertheless, Kerchnawe's figure of 1.1 million killed and dead requires additional verification, since Austro-Hungarian losses seemed small as compared with Germany's. If Germany lost more than 2 million people, Austria-Hungary should have lost proportionately about 1.6 million people, i.e., 500,000 more than indicated by Kerchnawe.

To verify Kerchnawe's figures, we calculated the excess of females according to the censuses of Austria, Hungary and Czechoslovakia for 1920 and 1921, as compared with the excess according to the 1910 census in Austria-Hungary. In 1910 there were 303,000 more females than males between the ages of 10 to 49. If we take the territory of Austria and Czechoslovakia, ten years later the excess of females between the ages of 20 and 59 (in other words, those who were aged from 10 to 49 in 1910) was 597,000. Since the population of Austria (within the borders of the Treaty of Saint-Germaine) and Czechoslovakia comprised two-thirds of Austria's population in the borders prior to 1914, the excess of 303,000 should be reduced to 204,000. Thus, after the war the excess of females increased by 393,000. This figure can be taken as the war losses in 1914-18. A similar calculation for Hungary gives an increase in the excess of females of 160,000. Thus, the excess of females on the territories of these countries grew by 553,000. If the population of Austria, Czechoslovakia and Hungary after World War I constituted half the population of Austria-Hungary, the total figure of Austro-Hungarian losses would be about 1,106,000, i.e., a figure close to the one given by Kerchnawe. Actually, however, the population of these countries was approximately 55 per cent of the population of Austria-Hungary. Therefore, the figure of losses calculated on this basis would be even lower than the one quoted by Kerchnawe. Consequently, we may consider that this figure withstood the test.

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missing as of March 31, 1919 (W. Winkler, *Berufsstatistik der Kriegstoten der Österreichisch-Ungarischen Monarchie*, Wien, 1919, S. 1). Twenty years later Winkler, referring to Kerchnawe, again mentions the figure of 905,000 killed, but sharply reduces the number of missing because many of them were traced after the war.

A comparison of the number of German sick and wounded (10.1 million) [1] with the corresponding Austro-Hungarian figure (5.3 million) also serves as another verification of Kerchnawe's figure. The number of sick and wounded in the German Army was almost twice as large as in the Austro-Hungarian. An approximately similar ratio is obtained when comparing the losses.

There are quite surprising discrepancies regarding the losses of *Turkey*. The figures quoted range from 250,000 to 550,000. Moreover, it is not known whether these are only battle losses or general losses.

There is no source giving direct data on the number of killed in the Turkish Army. The number of killed can be determined only by the number of wounded reported by *Ahmed Emin*, Professor of Statistics at the University of Constantinople, in his monograph *Turkey in the World War*. Referring to unpublished material from the second volume of the *Medical History of the War*, prepared for the press by the Medical Department of the Turkish War Ministry, Emin cites the following figures:

Turkish Casualties During World War I*

War Years	Number of Wounded
First	225,537
Second	314,936
Third	48,667
Fourth	122,697
Total for the 9 main armies	711,837
Plus losses in the army corps in Rumania, Galicia, etc.	51,916
Total	763,753

* A. Emin, *Turkey in the World War*, London, 1930, pp. 252-53.

The number of wounded in World War I in all belligerent countries was three times greater than the number of killed. Assuming the same proportion for Turkey we estimate that the *number of killed in the Turkish Army was 250,000.*

[1] *Die deutschen Ärzte im Weltkriege*, 1920, S. 220.

For *Bulgaria* the figure of killed also fluctuates within a wide range. Reports from the International Labour Office mentioned 33,000, while the French paper *Le Temps* reported 101,000. The most trustworthy is the statement of the Bulgarian War Minister who gave a complete report of losses of all categories. According to this report, 48,917 soldiers and officers of the Bulgarian Army were killed in the 1914-18 war, [1] a figure which we find acceptable.

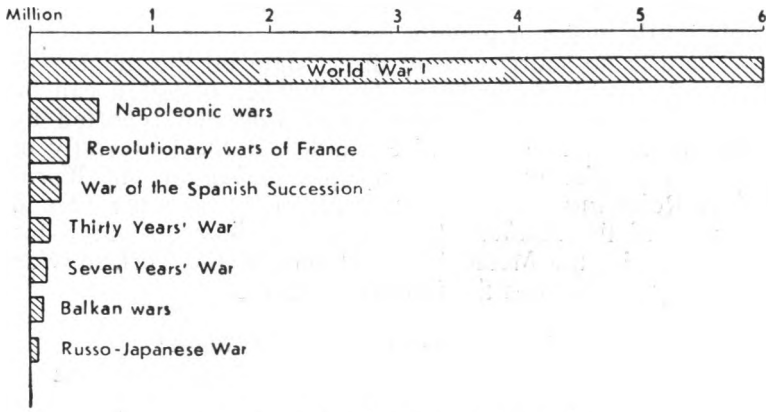

Fig. 5. Number of Killed in Wars

The attempts of the German imperialists to conquer the peoples of Europe inflicted untold losses on the countries of the German bloc itself.

Number of Killed in Armies of the German-Bloc Countries During the War of 1914-1918

Countries	Thousands
Germany	1,473
Austria-Hungary	727
Turkey	250
Bulgaria	49
Total	2,499

Approximately six million servicemen were killed in World War I. In terms of battle losses alone, no previous

[1] *Statistics of the Military Effort of the British Empire...*, p. 357.

war can be compared to World War I (see *Fig. 5*). On the average, almost 30 times as many soldiers and officers perished in one year of World War I, than in all the Napoleonic wars; 70 times more than in the Seven Years' War and nearly 250 times more than in the Thirty Years' War.

* * *

Died From Wounds in the 1914-18 War. Military medical services developed rapidly during World war I.[1] Advances in military surgery made it possible to reduce mortality from wounds. Severely wounded, as a rule, no longer remained for several days on the battlefield but were relatively quickly hospitalised.

In the *Russian* Army, the number of dead from wounds can be determined only approximately due to a lack of primary data. Although a column "died from wounds" is given in documents of the Main Army Headquarters and in War Ministry reports, it is very small and evidently includes only those who "died in the unit", i.e., soldiers and officers who were removed from the battlefield but died prior to being admitted to a medical institution. In previous wars this group of casualties in the Russian army was combined with the killed under one heading: "killed or died prior to being admitted to a medical institution". In the 1914-18 war an attempt was made to separate those who died from wounds prior to entering a medical institution from those killed, but the efforts were spasmodic and inconsistent. Moreover, those who died from wounds prior to entering a medical institution were designated in reports and publications simply as "died

[1] It must be admitted that in the first months of the war treatment of wounded in the Russian Army was not properly organised. A. Shingarev, a doctor and member of the State Duma, reported at a meeting of the Budget Commission on December 10, 1915: "Trains kept piling into Moscow crowded with hungry people who had not been fed for several days, their wounds unbandaged.... At times, their wounds were so infested with flies and worms that even the hardened medical personnel was horrified...". Only after the intervention of public organisations did the situation improve. (See Y. I. Smirnov, *Voprosy organizatsii i taktiki sanitarnoi sluzhby* [Questions of the Organisation and Tactics of the Medical Service], Moscow, 1942, p. 15.)

from wounds" with the result that some scholars presumed that this category included deaths of wounded in hospitals. On these grounds some authors deduced the percentage of those who died from wounds in relation to the total number of wounded and regarded it as the percentage of lethality. [1]

There are grounds for assuming that the group "died from wounds" listed in the War Ministry reports and the bulletin issued by the Central Administration of the General Staff varies in its composition. As regards soldiers, it includes those who died from wounds prior to entering a medical institution, while in the case of officers it includes all who died from wounds in hospitals. According to Avramov's data, 716 wounded officers died in their units, while the total number of officers who died from wounds according to data of the General Staff, was 2,967, a figure later "revised", in the light of more complete data, to 3,622. It is highly probable that the difference between 3,622 and 716, namely 2,906, is the figure of officers who died of wounds in medical institutions.

A report from the Chief Military Medical Inspector, received at the G.H.Q. at the beginning of January 1917 and covering the entire period of the war up to October 1, 1916, and for the Caucasian Army up to June 1, 1916, [2] offers valuable material for ascertaining the number of men who died from wounds.

According to this information, 2,474,935 wounded and shell-shocked were evacuated to medical institutions of which some 97,939 died. [3] The number of soldiers who died in hospitals can be taken as a basis for ascertaining the total losses of this kind throughout the Russian Army in World War I. This number was arrived at from data covering only 26.5 months of the war, while in fact the

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[1] See, for example, *Sanitarnaya sluzhba russkoi armii...*, p. 7, which gives the following percentages of lethality for wounded: officers, 3 per cent and privates, 0.43 per cent. These percentages have nothing in common with reality and are a result of deducing a percentage of entirely incommensurable magnitudes.

[2] *Trudy komissii...*, pp. 162-63. Data is for September-October, but since data for the sick are given as of October 1, it may be assumed that the figure for the wounded is of the same date.

[3] Ibid., p. 163.

war lasted more than 43 months. Although in 1917 the influx of wounded was considerably reduced, a certain number of soldiers previously wounded died during that year. [1] We shall therefore raise the Chief Inspector's figure proportionately to the number of unaccounted months (approximately 60 per cent), thus increasing the number of dead from wounds from 98,000 to 160,000. To this figure should be added the number of soldiers who died in their units (about 18,000, according to Avramov) and the number of officers who died from wounds (about 4,000). Thus, about 180,000 soldiers and officers of the Russian Army died from wounds.

Now let us determine the number of dead from wounds by utilising the hypothetical percentage of lethality among wounded. For this it is necessary to ascertain the total number of wounded. Unfortunately the exact figure cannot be established. Different sources give different figures, depending on the range of medical institutions covered, the degree of double count, the different periods and other reasons.

These divergences are partly explained by the difference in periods and partly by the inclusion of wounded who remained at their units and in hospitals in the battle zone. The number of wounded totals 4 million. There is no reason to assume that the actual number of wounded greatly exceeded this figure. The conclusion arrived at by the Americans *Bogart* and *H. Gilchrist* that there were some 4,950,000 wounded Russians is completely groundless. Even farther from the truth are *Döring*'s calculations that in the first two years of the war there were 5 million wounded or incapacitated Russian soldiers.

The question then arises of determining the percentage of lethality among the wounded. The best-known military health experts in the Soviet Union, *V. A. Oppel* and *Y. I. Smirnov*, concluded that in the 1914-18 war lethality among all wounded in Russia reached 10 per cent. But statistics reveal a smaller percentage of deaths. For example, according to the results of processing the casualty lists for officers and administrative personnel, there

[1] Moreover, data for the Caucasian front for June-October are not given.

were 3,706 deaths among 52,471 wounded, gassed or shell-shocked.[1] Since the dead are not included among the wounded, the percentage of lethality among wounded officers must be calculated as follows:

$$\frac{3{,}706}{52{,}471 + 3{,}706} = \frac{3{,}706}{56{,}177} = 6.6\%.$$

The question arises, to what extent can the percentage of lethality among wounded officers be applied to men? On the one hand, soldiers in the tsarist army had far less medical care than officers and, consequently, the percentage of lethality should be higher among the ranks. On the other hand, the average severity of wounds among hospitalised officers was much higher than among the ranks due to the fact that officers were picked up from the battlefield in time, while gravely wounded soldiers frequently died at the frontline. The severity of the wound undoubtedly played a more important role than the care. From this it may be assumed that among the ranks the percentage of lethality of wounded in medical institutions was smaller than among officers, presumably not exceeding 6 per cent, while in the case of officers it was 6.6 per cent. A lethality of 6 per cent for 4 million wounded gives a total of 240,000 deaths from wounds as opposed to the figure of 180,000 which was mentioned earlier. We consider it more correct to base our calculations on the figure of 240,000 since there are more grounds to believe that the figure given by the Chief Military Medical Inspector was underestimated than to assume that the percentage of lethality was only 4.5 (180,000 out of 4 million wounded).

Other authors arrived at different figures. For example, *Dr. Binshtok* set the number of dead from wounds at 300,000. He proceeded from a figure of 3,749,000 wounded and a lethality of 8 per cent, arriving at this percentage simply by doubling the mortality rates during the Russo-Japanese War. Naturally such a method is completely unjustifiable and Binshtok's remark that "it is hardly possible to speak of a big margin of error" is groundless.

[1] *Rossiya v mirovoi voine...*, p. 35.

True, he admits right there that this is a "realm of pure conjecture and further evidence could change our figures by tens of thousands".[1]

In ascertaining the number of dead from wounds, *Golovine* proceeds from mortality rates in the French Army. On the basis of *J. Toubert*'s calculations showing that of each 72 wounded three died within the first 12 hours, two in army hospitals and one in an evacuation hospital, Golovine (taking the figure of 4.2 million wounded[2]) arrives at the figure of 175,000 dead from wounds in the first 12 hours after being wounded, instead of Avramov's figure of 24,700. He therefore assumes that Avramov did not count 150,000 deaths and classed them among the category of missing. But that was not the case. Avramov counted not those who died in the first 12 hours after being wounded, but those who died in their units, i.e., before entering a medical institution. Golovine is wrong when he extends the category "dead from wounds" to include all cases of death from enemy action not causing the instant death of a soldier. But, in practice, it is impossible and even inadvisable to make such a differentiation in battle conditions. Moreover, Golovine takes Toubert's rates for army hospitals and evacuation hospitals (3 out of 72, that is, about 4 per cent) and sets the figure of dead from wounds in hospitals at 175,000, and, together with those who died in the first 12 hours, at 350,000.[3] Such a computation cannot be regarded as justifiable since the application of French "rates" to Russian conditions cannot possibly yield a proper estimate. For this reason we assume that our figure of 240,000 is closer to the truth since most of those who died in the first 12 hours after being wounded were included in the category of killed.

For the *British* Army the official history of the 1914-18 war presents the following data on the number of dead from wounds by separate fronts:

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[1] *Trudy komissii...*, p. 147.

[2] Golovine raises Avramov's figures by nearly 10 per cent, i.e., he adds 300,000 to 3,900,000.

[3] N. Golovine, *The Russian Army in the World War*, New Haven, 1931, pp. 85-86.

Number of Soldiers and Officers in the British Army Who Died from Wounds in World War I*

Fronts	Died from wounds
France and Flanders	151,356
Italy	58
Macedonia	1,299
Dardanelles	5,346
Egypt and Palestine	2,993
Mesopotamia	5,281
East Africa	754
South-West Africa	61
Total	167,148

* T. J. Mitchell and G. M. Smith, *Casualties and Medical Statistics of the Great War*, London, 1931, p. 12.

To this should be added 3,553 men from the Dominions and the Indian Army who died from wounds in the Dardanelles, [1] thus making a total of 171,000. From this figure should be deducted the 6,000 who died in hospitals from gas poisoning since chemical warfare casualties are listed separately (see below). Consequently, we are left with a total of 165,000 men who died of wounds in the British Army.

In estimating the number of dead from wounds in different parts of the British Empire some assumptions were allowed. For Australia, New Zealand and Newfoundland, official British sources give direct data on the number of dead from wounds. For the Canadian forces we made a calculation based on monthly statistics in the French theatre of hostilities up to July 1918. For the period of July to November 1918, the number of dead from wounds was ascertained on the basis of the number of wounded during these months and the percentage of lethality among Canadian wounded over the entire period from 1914 to 1918. [2] For the Indian troops, the percentage of lethality was determined according to losses in the Mesopotamian campaigns, which accounted for half of

[1] T. J. Mitchell and G. M. Smith, *Casualties and Medical Statistics of the Great War*, London, 1931, p. 200.

[2] Strictly speaking, this is not the lethality rate but the percentage of deaths from wounds in relation to the number of wounded; the lethality rate is the percentage of dead from wounds in the total number of wounded, which also includes those dead from wounds.

all the wounded soldiers of the Indian Army (5 per cent lethality). An 8 per cent lethality among wounded was accepted for South African forces

As a result we can give the following distribution of deaths from wounds by separate parts of the British Empire.

Part of the Empire	Thousands
United Kingdom	131
Canada	12
Australia	14
New Zealand	4
Union of South Africa	1
India	3
Total	165

The following data is available for other belligerents in the 1914-18 war. In *France* the number of dead from wounds is set at 250,000, of which 200,000 died in army hospitals and 50,000 in evacuation hospitals.[1] Deducting the number of deaths from poison gas, accidents and among colonial troops, we get a figure of about 220,000 dead from battle wounds. Since the total number of wounded in France reached 3 million, the lethality rate was about 7 per cent. In the *Belgian* Army there were 44,700 wounded. Assuming a 7 per cent lethality rate we find that there were about 3,000 deaths from wounds. According to Mortara, about 47,000 men died from wounds in the *Italian* Army. In the U. S. Army 13,700 men died of wounds.[2] A rough calculation for those *Balkan states* which fought against Germany gives a figure of about 50,000 deaths from wounds.

We now estimate the number of deaths from wounds in the German-bloc countries.

In *Germany* the number of deaths from wounds from August 2, 1914 to July 31, 1918 (data taken from a detailed medical report issued in 1934[3]) was as follows:

[1] M. Huber, "La population de la France pendant la guerre avec un appendice sur revenues avant et après la guerre", *Histoire économique et sociale de la guerre mondiale*, Paris, 1931, p. 421.

[2] *Medical Department of the United States Army in World War*, Vol. XV, Part II, p. 1026.

[3] *Sanitätsbericht über das Deutsche Heer...*, Bd. III, S. 63.

At army field units	61,704
At army field hospitals	181,817
In reserve garrison hospitals	45,532
Total	289,053

The total number of wounded admitted to various military medical institutions, deducting the number remaining in hospitals as of July 31, 1918, was 5,321,000. Thus the percentage of deaths from wounds was 5.4. The report gives no information about the number of deaths from wounds after July 31, 1918. Yet, the war lasted for another three and a half months, and men died from wounds even after the war ended. Thus it may be considered that the report did not include losses for some four months, or about 10 per cent of the entire duration of the war. The number of dead from wounds given in the report should be increased accordingly, giving a new total of 320,000. It is this figure that we have taken as a basis for our calculations.

In the *Austro-Hungarian* Army 149,777 men died of wounds during the first three years.[1] During the fourth year Austro-Hungarian military operations were not intensive and the number of deaths from wounds in that year (some 20,000) was accordingly smaller than the yearly average of 50,000 for the first three years. Thus a total of 170,000 men died from wounds in the Austro-Hungarian Army. According to the *Turkish* War Ministry, 68,378[2] men died from wounds in the *Turkish* Army. For *Bulgaria* there are exact data showing that 13,198 men died of wounds.[3]

All data on deaths from wounds can be summarised in the following table.

Altogether 1,325,000 soldiers and officers of all nationalities died of wounds during World War I. The number of wounded was about 18 million[4] and, together with

[1] S. Kirchenberger, "Beiträge zur Sanitätsstatistik der österreichisch-ungarischen Armee im Kriege 1914-1918", *Volksgesundheit im Kriege*, 1926, S. 70.

[2] A. Emin, *Turkey in World War*, London, 1930, p. 253.

[3] *Statistics of the Military Effort of the British Empire...*, p. 354.

[4] The *German Statistical Yearbook* estimates that there were from 20 to 30 million wounded are exaggerated.

Dead from Wounds During the 1914-18 War

Anti-German Bloc	Thousands	German Bloc	Thousands
Russia	240	Germany	320
France	220	Austria-Hungary	170
United Kingdom	131	Bulgaria	13
Italy	47	Turkey	68
Belgium	3		
Serbia and Montenegro	25		
Rumania	25	Total	571
Greece	2		
Portugal	1		
French colonial forces	12		
British dominions and India	34		
United States	14		
Total	754		

those who died from wounds, 19 million. From this we can estimate that about 7 per cent of all wounded died. Since 11 to 12 per cent died of wounds in the 19th-century wars, it may be said that military medicine had made considerable progress by 1914-18. [1]

* * *

Chemical Warfare Casualties. Let us recall that the German imperialists introduced chemical weapons in World War I. At the battle on the Ypres on April 22, 1915, the Germans made use of a poison gas which was named

[1] Another estimate of the number of dead from wounds was made by Bogart. He bases his calculation on a lethality rate among wounded of 0.4 per cent, taking this percentage from Döring who, in his turn, borrowed it from the reports of several Russian hospitals.

It is obvious that so incredibly low a lethality rate could never get Bogart anywhere near the real figure. Proceeding from a total number of 20,297,570 wounded and basing his computations on a 0.4 per cent lethality, he estimated that altogether 81,190 men died from wounds in World War I, i.e., only one-sixteenth of the figure we computed and one-third of that for France alone (E. Bogart, op. cit., p. 274).

Yprite. As a result of this first gas attack about 15,000 soldiers were put out of action. A few weeks later, on May 18, 1915, the Germans used chlorine gas against Russian divisions of the Second Army on the North-Western front with the result that 1,089 Russian soldiers died at the front and 7,735 soldiers were hospitalised. [1] After that such attacks became frequent and compelled the allies to take retaliatory measures against this flagrant violation of the 1899 Hague Treaty. At the end of September 1915, the British first used poison gas against German troops and, in February 1916, were joined by the French. In September 1916, Russian troops too began to use gas.

The total number of chemical warfare casualties cannot be precisely determined since available data are contradictory and do not cover all cases of deaths from gas poisoning. Nevertheless, a fairly close approximation of the number of casualties can be calculated.

Avramov cites the following figures for losses from gas poisoning in the *Russian* Army:

Casualties of Chemical Warfare in the Russian Army from 1915 to 1917 *

	Officers	Men	Total
Poison gas casualties	1,282	63,876	65,158
of which			
died in the unit	72	6,268	6,340
remained at the unit	684	15,974	16,658
were sent to medical establishments	526	41,634	42,160

* V. Avramov, op. cit., p. 41.

Thus, according to Avramov, 6,340 officers and men died of gas poisoning at the front. The accuracy of this figure can be checked by casualty reports for separate gas attacks in 1915 and 1916.

In comparing data for separate attacks with Avramov's figures we notice a difference in the percentage of lethality from gas poisoning. While Avramov's figure is less than 10 per cent of all casualties, it rises to 17 per cent in the case of separate attacks.

[1] *Sanitarnaya sluzhba russkoi armii...*, p. 330.

Russian Army Casualties in Gas Attacks *

Date of attack	Casualties among soldiers and officers	Died in units
1915		
May 18	8,932	1,101
„ 24	12	—
„ 30	2,213	1
June 24	7,750	1,737
1916		
June 20	2,116	434
July 20	3,813	486
August 9	1,009	179
August 21	2,128	335
September 9	2,763	867
„ 24	853	26
Total	31,589	5,166

* Compiled on the basis of data in *Sanitarnaya sluzhba russkoi armii* ..., pp. 330, 331, 341, 345, 350, 357, 361, 365.

Let us determine the number of dead from gas poisoning by the number sent to medical establishments. Of the 1,066 men poisoned by gas and hospitalised on the North-Western front in 1916, 60 died in frontline medical establishments, 6 on the way to hospital, and 60 in hospitals in the rear.[1] Altogether 126 men perished, i.e., 11.8 per cent of the total. If we are to believe on this basis that approximately 10 per cent of those sent to medical establishments died on the way to, or in, army hospitals, or in the rear, then 11,000 soldiers and officers of the Russian Army died from poison gas from 1915 to 1917.

Absolutely fantastic figures on Russian Army casualties from chemical warfare are given in foreign literature. Colonel *Gilchrist* of the U.S. Army in his work, which is an official publication of the American Chemical Warfare School at the Edgewood Arsenal,[2] points out that in

[1] *Sanitarnaya sluzhba russkoi armii...*, p. 363.
[2] H. L. Gilchrist, *A Comparative Study of World War Casualties from Gas and Other Weapons*, Washington, 1928, p. 7.

Russia 475,340 people suffered from gas poisoning, of whom 56,400 died. Gilchrist's figures are also accepted by *Prentiss* in his *Chemicals in War,* [1] although detailed figures on casualties in various gas attacks clearly show that Gilchrist's estimate of almost half a million victims is utterly fantastic. In the list of gas attacks cited by Prentiss, the total number of casualties among Russian soldiers and officers exceeds 30,000. Casualties in minor attacks, not quoted by Prentiss, were relatively small. It is a mystery where the other 445,000 men were gassed.

After the publication of Prentiss's book these absurd figures were widely circulated in the press. In 1943, for example, they were reproduced in the *Statistical Bulletin* of the Metropolitan Life Insurance Company. [2]

The number of chemical warfare casualties in the *French* Army was estimated at 8,000 by Gilchrist, a figure with which Prentiss concurred. The same figure was also cited by *Muntsch.* [3]

For *Italy*, Prentiss accepts the figure of 4,627 deaths from gas poisoning given by Gilchrist. At the same time Prentiss points out that the total number of casualties from gas attacks among Italian soldiers and officers is not 13,000, as indicated by Gilchrist, but at least 60,000.

For *Britain* Gilchrist quotes a figure of 6,062 deaths, whereas Prentiss points out that in Britain 8,109 men died of gas poisoning. To the figure of 6,109 quoted by *General Foulkes* he adds 2,000 British soldiers who died in April and May 1915. [4]

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[1] A. M. Prentiss, *Chemicals in War*, New York and London, 1937, p. 653. Prentiss merely rounds off the figure to 56,000.

[2] "Will the Axis Resort to Gas Warfare?", *Statistical Bulletin* No. 9, 1943, p. 2.

[3] O. Muntsch, *Leitfaden der Pathologie und Therapie der Kampfgaserkrankungen*, Leipzig, 1932, S. 12.

[4] C. Foulkes, *Gas! The Story of the Special Brigade*, 1934, p. 338. Possibly his estimate is somewhat exaggerated. Approximately 4,000 men were poisoned by gas in May 1915 (preliminary estimates based on the *Medical Services. General History*, Vol. II, p. 415; Battle of Ypres). Even if we add on the number of gas attack victims in April, the figure of dead will hardly reach 2,000. According to the *History of the Great War Based on Official Documents*, 5,899 men died from gas poisoning in the British army, but it was pointed out that many of those who perished during gas attacks were put in the

In the *American* Army the number of deaths from gas poisoning is set in the official reports at 1,421 and, including naval losses, at 1,462.

For *Germany* Gilchrist quotes the figure of 2,280 deaths from gas poisoning, but this is an underestimation. The Germans themselves held that a considerable number of gas attack victims had not been reported. *Hanslian* points out that from January 1 to September 30, 1918, there were 58,000 gas casualties in the German Army.[1] By studying chemical warfare at the Western front Prentiss arrives at the conclusion that about 200,000 people suffered from gas poisoning in the German Army, of which 9,000 died. However, this figure is greatly exaggerated. The medical report points out that 78,663[2] men in the German Army suffered from gas poisoning from January 1, 1916, to July 31, 1918. Together with casualties from gas attacks in 1915 the total number rises to 80,000. About 2,300[3] German soldiers and officers died from gas poisoning. Making an adjustment for possible unreported cases of deaths from gas poisoning prior to entering medical institutions, the figure should be raised to 3,000. Even then it will be only a third of the figure quoted by Prentiss.

Number of Victims of Chemical Warfare from 1915 to 1918

Anti-German bloc	Number of deaths (thousands)	German bloc	Number of deaths (thousands)
Russia	11	Germany	3
British Empire	8	Austria-Hungary	3
France	8		
United States	1.5		
Italy	4.6		
Total	33.1	Total	6

column "killed in battle", especially after the first attacks in 1915. (T. J. Mitchell and G. M. Smith, *Medical Services, Casualties and Medical Statistics of the Great War*, London, 1931, p. III.)

[1] R. Hanslian, *Der chemische Krieg*, Berlin, 1927, S. 5.

[2] *Sanitätsbericht über das Deutsche Heer...*, Bd. III, S. 175.

[3] O. Muntsch, op. cit., S. 12.

Austrian poison gas losses are estimated by Prentiss at 3,000. Owing to the obsence of any other sources we accept this figure although it is possibly exaggerated.

(For the total number of victims of chemical warfare during World War I see the table on page 83.)

The total number of chemical war victims is thus estimated at *39,000.*

By adding the number of killed, dead from wounds and from gas poisoning, we can determine that the total number of soldiers and officers who perished in World War I was *7,369,000.*

By countries, the number of killed, dead from wounds and gas poisoning was as follows (see *Fig. 6*).

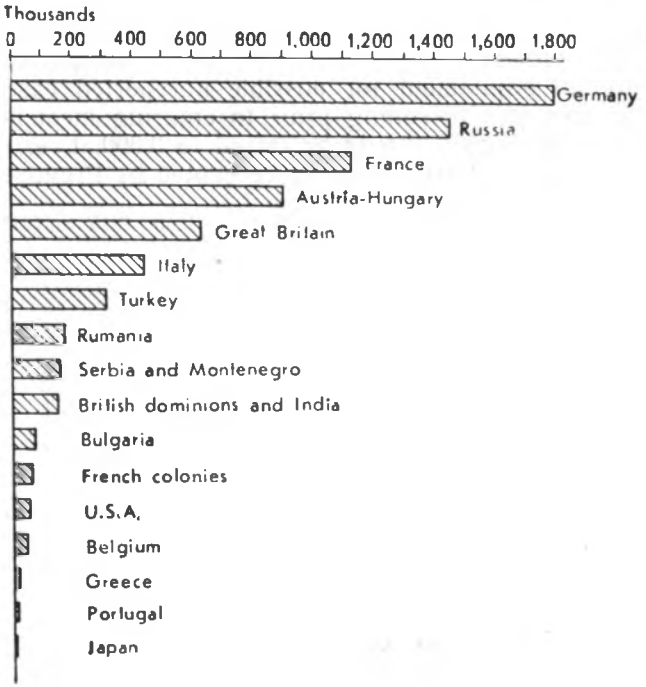

Fig. 6. Number of Killed and Dead in World War I by Countries

Countries	Thousands	Countries	Thousands
Germany	1,796	Australia	54
Russia	1,451	Canada	53
France	1,126	United States	52
Austria-Hungary	900	Belgium	35
Great Britain	624	India	27
Italy	433	New Zealand	14
Turkey	318	Greece	11
Rumania	177	Portugal	6
Serbia and Montenegro	165	Union of South Africa	5
Bulgaria	62	Japan	0.3
French colonies	60		

In the European countries 6,786,000 people perished in battle. [1]

In three countries—Germany, Russia and France—battle losses exceeded one million per country, in two other countries they exceeded 500,000. The Balkan countries (including Turkey) also sustained big losses (733,000), which are five times greater than those in the Balkan wars of 1912-13. Battle losses amongst the non-European countries were not big. The United States lost only one-third as many men as such small countries as Serbia and Montenegro.

Chapter II. THE PERIOD BETWEEN THE TWO WORLD WARS

The Civil War and foreign military intervention in Soviet Russia (1918-1920). The victory of the Great October Socialist Revolution in Russia ushered in a new era in world history, the era of socialism. Power in Russia was taken over by the workers and peasants and the *Decree on Peace* was one of the first acts adopted by the Soviet state.

The imperialist powers could not reconcile themselves to the birth of a new social system in Russia and sought to strangle the young Soviet Republic by rallying 14 countries against it. This foreign military intervention was supported by counter-revolutionary rebellions within the country, as a result of which the *Civil War* broke out in the first half of 1918.

[1] Turkey is not included among European countries because in 1914 the overwhelming majority of her population lived in Asia.

"Everyone knows," Lenin wrote, "that this war was forced upon us. We brought the old war to a close at the beginning of 1918, and did not start a new war. Everybody knows that the whiteguards attacked us in the West, South and East, only because they were assisted by the Entente." [1]

In the spring of 1918, U.S. and British forces landed in Murmansk and the Japanese in Vladivostok. At the end of May 1918, Czechoslovak prisoners of war, at the instigation of the Entente, started a rebellion in the Volga area. British troops invaded Turkmenia and Transcaucasia. Counter-revolutionaries in Russia, aided and abetted by the Entente, organised whiteguard armies.

The young Soviet Republic was forced to take urgent military measures to repulse the enemies. The Czechoslovak rebellion was suppressed and the whiteguards were driven back on the Eastern front. But a serious danger arose in the South where a whiteguard army was being formed with British and French help. At the same time French, Greek and Rumanian forces landed in Odessa, Kherson, Sevastopol and Novorossiisk. In 1919, the Civil War shifted to the South where Denikin launched a "drive on Moscow" to restore a "single, indivisible Russia".

In September 1919, Denikin's forces captured Orel and were threatening Tula. This was the turning-point in the military successes of the whiteguards. The tide turned in October 1919: the White Army was defeated in battles at Kromy and Orel. A blow struck in the Voronezh area by the Red cavalry under the command of S. M. Budyonny forced the Whites to beat a hasty retreat. In the East Kolchak's Army was defeated and most of its men surrendered. Yudenich's Army was routed near Petrograd.

In 1920, hostilities shifted to the Western front where the Poles attacked the Soviet Republic and occupied Kiev. After the summer offensive the Red Army defeated the Poles and drove them far to the West. In November 1920, following the defeat of the Wrangel group which had entrenched itself in the Crimea, foreign intervention and the Civil War were practically at an end. Bandit groups were also wiped out in different parts of the country and

[1] V. I. Lenin, *Collected Works*, Vol. 29, p. 67.

in 1922 the Japanese were driven out of the Soviet Far East.

Red Army losses during the Civil War (including the war against the Poles) were as follows[1]:

Year	Men
1918	8,292
1919	131,396
1920	300,059
1921	171,185
1922	20,826
Total	631,758

Unfortunately, it is not known precisely what is included in the term battle casualties in this case. However, a study of the figures indicates that battle casualties included both killed and wounded.

This is confirmed by material in the Large Medical Encyclopaedia (first edition) which shows that 580,773[2] Red Army soldiers were reported wounded and shell-shocked during 1918-21.

According to the Central State Archives of the Red Army, 502,000 men were wounded from October 1918 to November 1, 1920.[3] This also indicates that the figure of 632,000 was the number of killed and wounded. To determine on this basis the number of killed it is necessary to know the ratio between killed and wounded. According to our data, this ratio was as follows:

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[1] According to data from the Statistical Office, Central Administration of the Red Army. See *Narodnoye khozyaistvo SSSR v tsifrakh*, Moscow, 1925, p. 110.

[2] N. Zelenev, "Military Medical Service", *Bolshaya meditsinskaya entsiklopedia*, Vol. 5, p. 450. There are also indications that in 1920 the total number of killed, wounded and missing commanders and Red Army men was 294,000. (See N. D. Dubrovsky, *Kakoi ushcherb prinesla interventsiya rabochim i krestyanam* [The Damage Inflicted by the Intervention on the Workers and Peasants], Leningrad and Moscow, 1928, p. 65). This figure almost coincides with the figure given in the table (300,000 for 1920).

[3] File 6, register 4, folder 739, sheet 383. Special Memorandum written by the head of the Fifth Medical Statistical Office, Central Military Medical Department, Revolutionary Military Council.

Red Army Casualties on the Different Fronts from 1919 to 1920

Fronts	Period	Number of Red Army commanders and men		Excess of wounded over killed (times)	Sources			
		Killed	Wounded		File	Register	Folder	Sheets
South-Western (part of front)	June–August 1920	5,110	16,535	3.2	102	–	639	173, 178, 180, 183, 185, 190, 193, 196, 197
Western	July–September 1920	4,093	18,951	4.6	6	4	739	75-78
Losses on all fronts *	October–November 1920	2,340	7,851	3.4	6	4	739	303, 427
Eastern (separate armies)	March–October 1919	4,278	18,226	4.3	106	3	427 423 424 426 428	91 138 262-266 56 207, 216

* Here the figures are clearly incomplete because fierce battles against Wrangel were fought during this period. But we are interested in these data only from the viewpoint of the *ratio* between the number of wounded and the number of killed.

On the whole, the archive materials we collected and processed cover a considerable part of all Red Army casualties and indicate that on the average there were four wounded to each one killed. Proceeding from this proportion, on the one hand, and from the total of 632,000 killed and wounded, on the other, we find that approximately 125,000 Red Army men and commanders were killed. To verify this figure it is worth recalling that in 1926 the Service Division of the Central Department of the Red Army compiled a list of battle casualties among Red Army men and commanders in the Civil War. This list comprises 658 pages (including supplements) and each page contains 78 names. Thus, the total number of

perished men listed is somewhere in the region of 51,000,[1] i.e., less than half of the figure we established. Paradoxically such a ratio tends to strengthen our case rather than diminish it, for it is difficult to imagine, taking into account conditions during the Civil War, that the personal record of all who perished would comprise more than half of the actual total.

Losses in the Civil War fluctuated greatly depending on the situation. In some cases successful operations entailed almost no casualties. For example, in 1918 only one Red Army man was killed during the capture of Poltava[2] and, in 1919, only five men were lost during the capture of several stations in the Kherson-Nikolayev district. In the first half of July 1919, Red Army units from four out of the five armies on the Eastern front sustained losses of 138 killed and 664 wounded during a big operation to liberate the Urals. At the same time there were many cruel battles in the Civil War. In the Ufa operation in June and July 1919 the Red Army suffered casualties of 16,000 in killed and wounded.[3] In the course of one day (September 5, 1919) the Chapayev Division lost 600 men fighting against White Cossacks.[4] Fierce battles were also fought for Perekop and Sivash, which led to the defeat of Wrangel's forces and the liberation of the Crimea from the whiteguards and interventionists.

By referring to the archives we succeeded in establishing losses suffered by separate armies. From January to August 1920, 5,445[5] Red Army men and commanders were

[1] The lists included not only killed but also a certain, probably small, part of those who died from disease.

[2] N. Kakurin, *Strategichesky ocherk grazhdanskoi voiny* (Essay on the Civil War from the Angle of Strategy), Moscow and Leningrad, 1926, p. 35.

[3] Our estimates are based on the book by N. Kakurin, *Kak srazhalas revolyutsiya* (How the Revolution Was Fought), Vol. II, Moscow and Leningrad, 1926, p. 264.

[4] Y. Vuberman, "Defeat of the White Cossacks by the Chapayev Division (1919)", *Voyenno-istoricheski zhurnal*, No. 2, 1939, p. 29.

[5] Calculated on the basis of materials from the Central Archives of the Red Army, file 102, folder 639, sheets 28, 56, 62, 107, 124, 143, 166, 173, 178, 180, 183, 185, 190, 193, 196 and 197. The number of killed is not given in full because there were many killed among the missing; moreover, no reports are available on losses in the second half of March, the first half of May, and so on.

killed in the 13th Army (according to dispatches from the Chief of Operations Department to South-Western front H.Q.). During that period the 13th Army bore the main brunt of battles against Wrangel's offensives.

It is impossible to make any precise statement of the losses sustained by the *White* armies, but it is known that they were considerable. In one battle at Stavropol on November 7, 1918, the Whites left behind 2,500 killed and 4,000 wounded on the battlefield.[1] In the same year they lost 1,500 in killed and wounded at battles near Sosyka, Gulyai-Borisov, Yegorlykskaya and Tselina. After Wrangel's Army started its offensive, Kutepov's corps lost 23 per cent of its men in three-day battles. In battles at Orel the 1st Kornilov Regiment alone lost 400 men. Even in smaller operations the losses of the whiteguards ran into hundreds of men. For example, on April 7, 1919, in the battle of Korosten they lost 300 in killed. In the same year they lost 200 in killed at Proskurov and Starokonstantinov and 500 in killed and wounded at Berezovka.

In 1919 the Whites also sustained heavy losses on the Eastern front. "In one week, from March 18 to 24, the enemy's 7th Division lost 1,800 men. The losses of the 3rd Urals Corps exceeded 3,500 men in killed, wounded and prisoners from March 15 to April 5." The 6th whiteguard corps "lost 260 officers and 4,656 soldiers from April 27 to May 3. In one week the enemy lost on the main direction, according to underestimated data of the Whites themselves, about 11,000 soldiers and officers".[2]

White bands which were operating at that time chiefly in the Ukraine also suffered big losses. About 2,000 Petlura men were killed in Volyn Gubernia in January 1919 alone whilst another 3,000 were killed during the liquidation of the Zeleny and other bands.

Some idea of the scale of losses is afforded by a survey of the numerical strength of the White armies on all Civil War fronts.

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[1] After the battle at Stavropol Denikin admitted that "from 100 to 150 men remained in regiments which formerly counted many thousands".

[2] L. M. Spirin, *Razgrom armii Kolchaka* (Defeat of Kolchak's Army), Moscow, 1957, pp. 100, 158.

Strength of the White Armies on February 1-15, 1919 *

Fronts	Thousands
Southern	85
Eastern	140
Western	104
Northern	12.5
North Caucasian	7.5
Total	349

* N. Kakurin, *Kak srazhalas revolyutsiya* (How the Revolution Was Fought), Vol. II, p. 137. These figures cover 65 per cent of the total strength of the Whites. Information is taken from a report by the Commander-in-Chief No. 849, Red Army Archives, folder 34805.

Thus, counter-revolutionary forces, not counting foreign interventionist armies, totalled about 350,000 men. In addition they also had reserves in the rear. This figure was not stable: it fluctuated, influenced by casualties and the mobilisation of the population on the captured territories. On the whole, the strength of the White armies steadily increased up to the summer of 1919 and then began to dwindle. From March to June 1919, White forces on the Eastern front dropped from 135,000 to 87,000 as a result of heavy casualties. In November 1920, when the Red Army pushed the whiteguards back to the shores of the Black Sea, Wrangel evacuated altogether 83,000 people among whom there were also many civilians.

Data on the strength of the White armies and their casualties indicate that the total number of killed and wounded White soldiers on the Southern front did not exceed 250,000 from 1918 to 1920; the actual number of killed being about 50,000. This figure can, to a certain extent, be verified if we compare it with the Polish losses on the Western front, which, according to our calculations, amounted to 38,000 killed. The scale of operations, the strength of the army and its weapons in the West in 1920 were greater than in the South from 1918 to 1919. On the other hand, the period of major battles against the Poles lasted for only a few months, while the period of intensive operations in the South was much longer. If we add up the losses on the Eastern front, in Siberia and the Far East, and Yudenich's losses during his offensive on Petrograd in 1919, we find that losses suffered by the

Whites on all Civil War fronts were about 175,000. Thus, the *number of killed during the Civil War in Russia, including Polish and Finnish losses, was about 300,000.*

Mention should also be made of the losses inflicted by the guerrillas on the Whites and interventionists. For example, scattered guerrilla groups in Amur Region "grew into a real guerrilla army which, by the spring of 1919, had more than 100,000 active fighters and a single command. They inflicted considerable losses on the interventionists and the whiteguards, killing up to 17,600 men".[1] By September 1919, there had been 145,000[2] guerrillas in Siberia and the Far East. Naturally, they too sustained considerable losses and some 4,300[3] guerrillas from Amur Region perished in battles, ambushes and raids.

The interventionists backed the White armies with all possible help and equipment. From March to September 1919, Britain supplied Denikin with 558 guns, 42 tanks, 1.7 million shells, 160 million rounds of ammunition and 250,000 uniforms.[4] In his report on July 4, 1919, Lenin pointed out that the British "have sent equipment for 250,000 men and have provided all the arms".[5] In addition, the United States sent Denikin 100,000 rifles.[6] In 1920 alone, the French Government supplied Poland with 1,494 guns, 291 planes, 2,600 machine-guns, 327,000 rifles, etc. Wrangel also received from the British and French the latest armoured cars, tanks, planes and munitions.

Nor was this aid confined to the supply of weapons and equipment. In the Far East the Japanese landed an army of 100,000. The Czechoslovak corps, which, as a result of intrigues stirred up by agents of the Entente, organised a rebellion against the Soviet state, had more than 40,000

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[1] S. Shishkin, *Grazhdanskaya voina na Dalnem Vostoke* (The Civil War in the Far East), Moscow, 1957, p. 66.

[2] M. Stishov, S. Naida, *Razgrom tryokh pokhodov Antanty* (Defeat of the Three Campaigns of the Entente), Moscow, 1953, p. 32.

[3] S. Kurguzov, *Amurskiye partizany* (Amur Guerrillas), Khabarovsk, 1929, p. 55.

[4] A. Likholat, *Razgrom natsionalisticheskoi kontrrevolyutsii na Ukraine (1917-1922).* (Defeat of the Nationalist Counter-Revolution in the Ukraine, 1917-1922.) Moscow, 1954, p. 350.

[5] V. I. Lenin, *Collected Works*, Vol. 29, p. 459.

[6] M. Angarsky, "Twentieth Anniversary of the Victory Over Denikin", *Voyenno-istoricheski zhurnal* No. 3, 1939, p. 6.

men. The Red Army, however, defeated not only the Whites but also their foreign accomplices.

The *Poles* also suffered considerable losses in the war against Soviet Russia. A Polish official commission estimated war casualties as follows[1]:

Type of casualties	Officers	Soldiers	Total
Wounded	3,180	110,330	113,510
Dead	1,096	29,241	30,337
Killed	1,081	16,197	17,278
Missing	669	50,705	51,374
Unclassified casualties	569	38,261	38,830
Total	6,595	244,734	251,329

Total Polish casualties per annum were as follows:

Year	
1918	1,128
1919	48,614
1920	201,587

The Poles sustained the biggest losses in the summer months of 1920 (see *Fig. 7*) when hostilities were at their most intensive. In July and August alone they suffered 82,000 casualties.[2]

Examining the losses by categories we are struck by the obvious underestimation of the number of killed soldiers. According to this data there were 6.8 wounded per one killed, a ratio not registered in any previous war. At the same time there were 2.95 wounded officers to each one killed. There is no doubt that among the missing and unclassified casualties there was a considerable number of killed soldiers and, for this reason, the figure of 17,000 killed is obviously incomplete. A more correct figure of the number of killed soldiers can be obtained by applying the ratio of wounded and killed among officers (i.e., 2.95). This gives a figure of 37,000 killed soldiers, rising to 38,000 if we include killed officers. This means that there were actually 21,000 killed soldiers among the 89,000 listed as missing and in the group of unclassified

[1] M. Handelsman, *La Pologne*, Paris, 1932, p. 340.

[2] J. F. Fuller, British writer on military affairs, underestimates Polish losses, naming a figure of 50,000 for the same months (see his *Decisive Battles*, New York, 1940, p. 967).

casualties. The official figures for the number of killed are clearly underestimated. For example, in August 1920, at the height of the battles against the Red Army, the number of killed according to official data was 2,128, i.e., 70 per day along the entire front. It is obvious that these figures are underestimated. At the same time there were 23,632

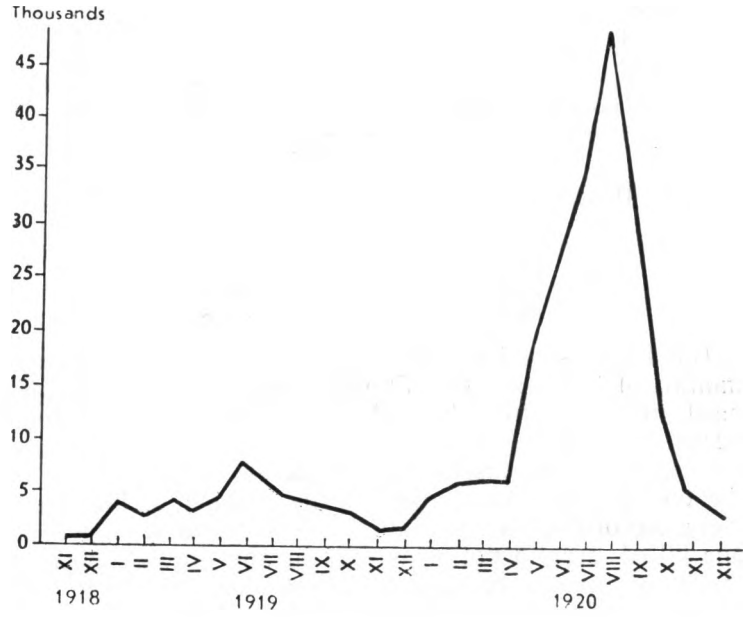

Fig. 7. Losses of Poles in the War Against Soviet Russia in 1918-20

wounded in August, 11 times greater than the number of killed—an incredible ratio. From this it follows that the figure we named is closer to reality.

The Graeco-Turkish War of 1919-22 was a national-liberation war waged by the Turkish people against foreign invaders. It ended in the defeat of the Greek Army and the complete expulsion of the invaders. Colonel Bujac presents the most trustworthy data on Greek losses during this war.

During the war more than 19,000 Greek soldiers and officers were killed and 18,000 were posted missing. If

Greek Casualties During the Graeco-Turkish War *

Years	Killed	Died from wounds and disease	Wounded	Missing
1919-20	1,206	2,188	2,283	—
1921	6,456	1,140	30,567	545
1922	11,700	1,550	16,030	17,450
Total . . .	19,362	4,878	48,880	17,995

* Bujac, *Les campagnes de l'Armée Hellénique 1918-1922*, Paris, 1930, pp. 339, 341. He gives the figure of dead alongside the number of killed. Evidently these are the dead from wounds and disease, which we indicate in the table.

slightly more than half of the missing, i.e., 10,000 are to be added to the category of killed and dead from wounds and disease, total Greek losses will be 34,000, a figure which is further quoted by the Greek scientist *A. A. Pallis*,[1] and which, in our opinion, is a reliable basis for further computations.

Estimating the number of dead, Bujac does not indicate whether the deaths occurred as a result of wounds or disease. A comparison of the dynamics of the number of wounded with the number of dead reveals a lack of consistency in changes in the two columns, indicating that only deaths from disease are given, while deaths from wounds are included in the total number of killed. Assuming a lethality rate of 6 per cent we estimate that 3,000 Greeks died from wounds. Consequently, of the 29,000 Greek battle losses 26,000 were killed.

Hersch's assumption that the Greeks lost 100,000 men in this war is wrong. Similarly, he overestimates Turkish losses. He assumes that Turkey lost 500,000 in killed and dead, including casualties during the 1914-18 war, whereas in fact they were much smaller. *N. Korsun* mentions a figure of 12,000,[2] but this obviously does not include all

[1] Andreades, *Les effets économiques et sociaux de la guerre en Grèce*, New Haven, 1928, p. 134; quoted after F. W. Notestein and others, *The Future Population of Europe and the Soviet Union. Population Projections 1940-1970*, 1944, p. 76.

[2] N. Korsun, *Greko-Turetskaya voina 1919-1922 gg.* (Graeco-Turkish War of 1919-22), Moscow, 1940, p. 45.

casualties. It would be more accurate to assume that Turkish losses were about the same as those of the Greek army. Thus, the total number of killed in the Graeco-Turkish War amounts to about 52,000.

Italo-Abyssinian War of 1935-36. After the Graeco-Turkish War Europe had a 12-year period of peace which was interrupted by the Italian fascists' attack on Abyssinia. The Italian imperialists had attempted to capture Abyssinia as far back as 1895-96. But the attempt had failed miserably and the Italian Army was routed in the Battle of Adua. This time, too, the Italians encountered stubborn resistance from the Abyssinians. Instead of the easy "routine march" Mussolini had expected, he was faced with a long drawn-out war. The Italian forces, armed to the teeth with modern weapons, took seven months to crush the Abyssinian Army with its total of six tanks and a few aircraft! Officially it was reported that the Italians lost only 1,304 men,[1] but this figure is obviously greatly underestimated. In the first three months of the war, 1,247 men recognised as unfit for military service were sent back to Italy on hospital ships. According to official Italian data, the Italians lost only six soldiers and officers per day throughout the entire war, a figure which is utterly incredible. It would be far more accurate to consider that about 5,000 Italian soldiers and officers were killed during the seven months of the war. General Fuller gives a figure close to this, stating that "the war had cost him [Mussolini] in all 4,359 lives".[2]

But even this figure, which is much higher than the official data, is nothing in comparison with the losses suffered by the Abyssinians. According to a report from the Ethiopian delegate to the Paris Peace Conference on August 2, 1946, 700,000 Abyssinians, or some 7 per cent of the population,[3] perished in the war against the Italian invaders. This figure is yet another indication

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[1] R. Ksilander, *Zavoyevaniye Abissinii v 1935-1936 gg.* (The Conquest of Abyssinia in 1935-36), Leningrad, 1941, p. 118.

[2] J. F. Fuller, *Decisive Battles; Their Influence upon History and Civilisation*, New York, 1942, p. 1003.

[3] Including the country's losses in World War II.

of the huge sacrifices made by the African peoples in their struggle against European colonialists.

The National-Revolutionary War in Spain. 1936-39. Two months after fascist Italy had seized Abyssinia, the Spanish fascists, supported by Hitler and Mussolini, raised a rebellion against the lawful Republican Government of Spain. This rebellion led first to civil war and then to Italo-German intervention which lasted for several years. In March 1939, as a result of an anti-republican conspiracy by Casado-Besteiro, Madrid was captured by the rebels.

During the national-revolutionary war Spain was the scene of many cruel battles. The rebel forces suffered heavily at the hands of the Republicans who fought with exceptional courage and whose own big losses were due mainly to their lack of arms and equipment. For example, at the end of 1938, when the rebels mounted a fresh offensive in Catalonia, the Republican Army of 100,000-120,000 soldiers possessed only 37,000 rifles and one plane to every 15-20 fascist aircraft. Similarly the ratio in tanks was 1 : 35, machine-guns 1 : 15, and guns 1 : 30. "While the poorly armed Republican soldiers, disregarding their bleeding wounds, were stemming the onslaught of the superiorly-armed enemy, machine-guns, guns and planes purchased by the Spanish Republican Government were lying idle in France, because the French authorities refused to allow them to be shipped to Republican Spain." [1]

It is impossible to give any precise figures for the total casualties in this war. We can obtain only more or less approximate data.

As regards the Republicans, we do possess information for the main battles. For example, 7,470 Republican soldiers were killed in battles along the River Ebro from July 25 to November 16, 1938. [2] The monthly losses of another big army group comprising about 40,000 men amounted

[1] D. Ibarruri, "The National-Revolutionary War of the Spanish People Against the Italo-German Interventionists and Fascist Rebels (1936-39)", *Voprosy istorii* No 11, 1953, p. 45.

[2] A. Veliki, *Medical Service of the Forces of Republican Spain and the Operation on the River Ebro*, scientific thesis, Vol. II, 1940, p. 279.

to about 1,000 killed throughout 1937.[1] According to other data, the Republicans lost 10,000[2] in four months of hard fighting on the Ebro.

M. Aznar,[3] a pro-Franco historian specialising in this war, gives greatly exaggerated figures for Republican casualties. For example, he points out that the Republicans lost 19,600 on the Ebro (according to statements of war prisoners), 14,000 in the battle of Teruel, 2,000 at Guadalajara in 1937, 5,000 at Brunete, 4,000 at Belchite and 2,000 during the encirclement of Oviedo.

The losses of the rebels, according to underestimated data of the Francoist general *Astray*, amounted to 70,000 killed and 353,000 wounded. *Villar Salinas*, author of a special study of demographic processes in Spain during the civil war, considers that this number does not include Moroccans or soldiers and officers of various other nationalities who fought in Spain. General Aznar hardly makes any mention of Franco's losses, although in 1940 49,683 invalids—former soldiers and officers of Franco's army—were registered. In addition, 50,000 Germans and 150,000 Italian fascists[4] who fought on the side of Franco sustained big losses.[5] For example, during the Gaudalajara battles in 1937 more than 10,000 killed and wounded were left behind when the Italian divisions were routed.

Losses among the International brigades were as follows: about 3,000 French, 1,800 Americans, 600 Italians, 500 British and more than 200 Swedes.[6]

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[1] T. Kristanov, *Sanitarnaya sluzhba internatsionalnykh brigad v Ispanii* (The Medical Service of the International Brigades in Spain), Tashkent, 1942, p. 93.

[2] H. Buckley, *Life and Death of the Spanish Republic*, London, 1940, p. 395.

[3] M. Aznar, *Historia militar de la guerra de España (1936-1939)*, Madrid, 1940, pp. 387, 583, 784, etc.

[4] J. Villar Salinas, *Repercusiones demográficas de la última guerra civil española*, Madrid, 1942, pp. 64, 245.

[5] *El balance de veinte años de dictadura fascista*, Praga, 1959, p. 35.

[6] J. Garcia, *Ispansky narod v borbe za svobodu, demokratiyu, protiv fashizma* (The Spanish People's Struggle for Freedom and Democracy, Against Fascism), Moscow, 1956, p. 173; "International Brigades in Spain (1936-38)", *Voprosy istorii* No 7, 1956, p. 46.

On the basis of this information we can estimate that approximately *300,000 soldiers and officers were killed in the national-revolutionary war in Spain.* [1]

The period between the two world wars was marked by an advance in the national-liberation movement of the oppressed peoples of Asia and Africa. In Northern Africa the Rif tribes led by Abd-el-Krim rose up against Spanish and French domination, and the European powers needed an army of 150,000 men to crush the rebellion. In Syria, too, the Arabs rose up against the French imperialists (from 1920 to 1922 and from 1925 to 1926).

Mention should also be made of various uprisings against Britain. For example, in the Middle East the British lost 2,500 in killed and wounded and the Arabs 8,000. In India the British lost 2,000 killed and wounded soldiers and officers. [2] Also, in 1919, Britain waged her third war against Afghanistan, which lasted for more than three months.

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Altogether about 800,000 soldiers and officers perished in wars waged by European states between the two world wars.

Chapter III. WORLD WAR II (1939-45)

World War II was once more the result of the imperialist powers' attempts to re-divide the world. German imperialism was especially aggressive, and with the advent of Hitler to power frenzied war preparations began. Germany's militarisation was backed by reactionary circles in Britain, France and the United States, who sought to set Germany against the Soviet Union. This was the crux of the "appeasement" policy. The disgraceful Munich Agreement which Britain and France concluded with nazi Germany at the end of September 1938 was a direct

[1] Including losses of Moroccan units which fought on the side of Franco.

[2] E. W. Sheppard, *A Short History of the British Army*, London, 1940, pp. 363, 369.

consequence of this policy and signified the surrender of the Western powers to Hitler. Britain and France gave him a free hand in the East. But these calculations were to turn against the imperialists themselves, and war soon broke out within the capitalist world itself. The Munich "appeasers", who had intended to stay safely in the background, suddenly found themselves in the thick of war.

On September 1, 1939, Germany attacked Poland. Shortly afterwards Britain and France declared war on Germany. At first the war was confined to insignificant skirmishes: the British and French forces stationed on the frontiers with Germany did not advance, although there was no substantial army facing them. Hitler continued to hurl all his forces against Poland, leaving only 23 divisions in the West to hold off the 110 divisions of the French and British armies. An offensive on Germany did not enter into the plans of the British and French General Staffs. They still hoped to provoke a conflict between the U.S.S.R. and Germany and reap "the fruits" of the reciprocal exhaustion of these countries. However, before attacking the U.S.S.R. Hitler decided to conquer the West European countries. In April 1940, German troops occupied Denmark and Norway. On May 10, nazi forces invaded the Netherlands and Belgium and on June 5, 1940, large-scale hostilities were started against France. Owing to treachery on the part of the French supreme military command, the French Army failed to offer proper resistance to the nazi hordes and, on June 22, 1940, France signed a formal surrender in Compiègne, the selfsame place where Germany had surrendered in 1918.

Following the capture of France and the unsuccessful aerial "Battle of Britain", Hitler occupied Yugoslavia and Greece, who offered serious resistance to the nazi invaders.

On June 22, 1941, Hitler launched his biggest "operation", the attack on the U.S.S.R., perfidiously breaking the non-aggression pact signed in 1939. World War II, which had started as an imperialist war between nazi Germany on the one hand and Britain and France on the other, now assumed a different character, merging with a war of all freedom-loving peoples against fascist aggression and becoming a war of liberation. The Soviet

Union's entry in the war greatly enhanced its liberatory nature and turned it into a war for the destruction of the fascist yoke and for saving the peoples from nazi enslavement.

The heroic resistance of the Soviet people frustrated all nazi attempts to conquer the U.S.S.R. The Hitlerite hordes were routed by the Soviet Army which upheld its country's independence and saved the European peoples from the brown plague.

The German people paid a heavy price for the second attempt of the German imperialists to gain world supremacy and enslave other countries and nations.

In the first period of World War II, prior to the attack on the U.S.S.R., Hitler, overrunning one country after another, achieved numerical preponderance over the enemy and won relatively easy victories. In their official reports, the Hitlerites boasted openly of their successes and, in an attempt to show the German people that the war waged by their Führer was "bloodless", they published exceedingly low, falsified accounts of battle losses.

On October 6, 1939, after defeating Poland, Hitler, in his Reichstag speech, cited the following figures for German casualties in the war against Poland: 10,572 killed, 30,322 wounded, and 3,409 missing.[1] Subsequently the fascist press reported that the seizure of Norway cost only 1,317 killed (not counting 2,375 men who perished on the way); the capture of Greece—1,484 in killed and missing[2] and the victory over France—27,074 in killed. According to the German Information Office, Germany's manpower casualties in the first year of the war amounted to 39,000 killed, 143,000 wounded, and 24,000 missing—a total of 206,000. The second year of the war, prior to the attack on the U.S.S.R., was marked by fewer military operations. In 22 months of the war, according to official figures of the German General Staff, there were about 300,000 casualties in killed, wounded and missing. It will be subsequently shown that the actual casualties were much bigger. In the second period, which began with the

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[1] *Chronik des Krieges. Dokumente und Berichte*, Bd. I-II, 1940, S. 165.

[2] C. Mackenzie, *Wind of Freedom*, London, 1944, p. 207.

attack on the Soviet Union, the Hitlerite forces encountered in the Soviet Army a powerful enemy capable of striking crushing blows. Even when the fascist hordes, enjoying the advantage of a surprise attack and superiority in armaments and also two-years experience in modern warfare, captured a considerable part of Soviet territory compelling the Soviet forces to retreat despite their heroic resistance—even during this period of fierce fighting Soviet troops continuously harassed the fascist forces and inflicted heavy losses on them.

Nazi generals themselves admitted that, by the autumn of 1941, in the Centre Army Group "many companies were reduced to a mere 60 or 70 men", and after the Battle of Moscow "the combat strength of most companies was reduced to forty men". [1]

At the end of 1941, under the impact of a massive Soviet counter-offensive, nazi troops were forced to abandon their positions near Moscow and retreat. The German forces suffered their first big military defeat on a large sector of the front. The *blitzkrieg* petered out and the plans for the capture of Moscow completely failed. During the Battle of Moscow from December 6 to December 27, 1941, the German army lost about 120,000 soldiers and officers in killed.

In the summer of 1942, the Germans again mounted an offensive, no longer along the entire front (Hitler no longer had enough forces), but only in the southern part. Here they met even stronger resistance of the Soviet Army, now battle-seasoned in over a year's fighting and supplied with first-class armaments and munitions produced by plants which had been evacuated to the East and had resumed production there.

By mid-September 1942, the German forces had been halted by the Soviet Army at Stalingrad. The tide had begun to turn. The nazis were forced to abandon their plan of cutting off the central European part of the Soviet Union from the Volga and the Urals and then encircling and capturing Moscow. The initiative was now taken by the Soviet Army which, on November 19, 1942, mounted

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[1] See General Blumentritt's memoirs in the book *Rokovyie resheniya* (The Fatal Decisions), Moscow, 1958, pp. 92, 105.

an offensive in the South that ended in the encirclement and annihilation of the German forces at Stalingrad. The victory at Stalingrad was the *turning point* in the course of the Great Patriotic War against the nazi invaders and of World War II. All mankind watched the invading army growing weaker, while the Soviet Army steadily gained in strength. An idea of the unprecedented slaughter which took place in the Stalingrad area can be gained from the fact that after the fighting ended 147,200 German soldiers and officers and 46,700 Soviet soldiers and officers lay dead on the battlefield.

The total number of Germans who perished at Stalingrad was, in fact, bigger than the actual number buried. According to a report from the former Chief of Staff of the 17th Army Corps sent to "liberate" the trapped German forces, more than 100,000 men perished there from January 24 to February 2, 1943.[1] The nazi generals themselves admit the colossal losses at Stalingrad. "Never before in Germany's history," wrote General Westphal, "had so large a body of troops come to so dreadful an end."[2]

During the winter campaign of 1942-43 the Soviet Army inflicted heavy defeats on the Germans in the North Caucasus and Voronezh area, wiped out enemy bridgeheads in the Demyansk district on the central front and breached the blockade of Leningrad.

The turn which began with the Battle of Stalingrad was consolidated in 1943. Whereas at the beginning of that year the nazis still held the banks of the Volga, at the end of 1943 they were hurled back to the Dniester. On July 5, 1943, began the famous Battle of the Kursk Bulge which ended in the complete rout of the German forces. During its retreat the hitlerite army suffered huge losses. This overwhelming Soviet victory completed the radical turn in the tide of the Great Patriotic War and World War II.

The year 1944 brought the Soviet Army yet more victories. The defeat of the Germans on the Leningrad front and the victorious advance of the Soviet forces in the Ukraine swelled the losses of the German Army. Fifty-two

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[1] H. Doerr, *Der Feldzug nach Stalingrad.*
[2] See his article in *Rokovyie resheniya*, p. 210.

thousand enemy soldiers perished when ten divisions were trapped in the Zvenigorod-Shpola district. In April-May 1944, the Soviet Army struck a crippling blow at the Germans in the Crimea. In June-July, nazi forces were defeated at Vitebsk, Bobruisk and Mogilev and 30 German divisions were trapped near Minsk. As a result of this Soviet offensive, the enemy was hurled back to the Vistula. Towards the end of 1944, the nazi invaders were driven out of the Soviet Union and on October 23 Soviet soldiers entered Eastern Prussia.

In 1945, the Soviet people scored many historic victories crowned by the complete rout of the enemy. On January 12, the Soviet Army began its most powerful and successful offensive. In a remarkably short time the enemy was driven back hundreds of kilometres and Soviet troops reached the approaches to Berlin. On April 25, Soviet troops linked up with the Americans in the Torgau district on the River Elbe and on April 30 the victory flag was hoisted over the Reichstag. On May 2 Soviet forces completed their capture of Berlin and on May 8, 1945, nazi Germany unconditionally surrendered. The heroic Soviet Army and the entire Soviet people led by the Communist Party scored an epochal victory.

The heroism of the Soviet soldiers at the front was matched by the deeds of the Soviet people in the rear who worked selflessly to provide the army with everything it needed. War production steadily grew during the war years as shown by the following table [1]:

Average Monthly Production in the U.S.S.R. (Units)

Years	Guns	Tanks and self-propelled guns	Planes
1941	5,124	696	1,630
1942	10,591	2,060	2,120
1943	10,858	2,001	2,907
1944	10,207	2,415	3,355
1945	8,567	2,570	2,206

The following table shows how increased production of armaments combined with the successful destruction of

[1] *Istoriya velikoi otechestvennoi voiny* (History of the Great Patriotic War), Vol. 6, Moscow, 1965, p. 52.

enemy manpower and materiel sharply changed the balance of power at the front[1]:

Relationship of Forces and Armaments of the Armies on the Soviet-German Front from 1942 to 1945

Forces and armaments		November 1942	June 1943	January 1944	June 1944	January 1945
Strength of forces (million)	Soviet Army	6.1	6.4	6.2	6.4	6.5
	German Army	6.1	5.2	4.9	4.0	3.1
Tanks and self-propelled guns (thousands)	"	6.9	9.9	5.4	7.8	12.9
		6.6	5.9	5.4	5.2	4.0
Guns and mortars (thousands)	"	77.7	103.1	92.6	92.6	108.0
		70.0	56.3	54.6	48.6	28.5
Military aircraft (thousands)	"	3.2	8.4	8.5	13.4	15.5
		3.5	3.0	3.1	2.8	2.0

German losses in battles against the Soviet Army during World War II are greater than their total losses in all previous wars. The losses inflicted on the Hitlerites by the Soviet Army were many times greater than those inflicted on them by any other army of the anti-Hitler coalition.

The nazis did everything possible to minimise their losses in the war against the U.S.S.R. As a result of this systematic deception, no one in Germany believed the official data on German Army casualties.

It is interesting to note that whereas during the period when the Wehrmacht overran all of Western Europe official German publications counted losses in thousands or, at the most, in tens of thousands, in the very first months of the war against the Soviet Union the nazis began to count casualties in hundreds of thousands. For example, on December 11, 1941, Hitler, in a speech in the Reichstag, stated that the German Army had suffered 162,314 killed, 571,767 wounded and 33,334 missing—a total of

[1] Ibid., p. 185.

767,415 men from June 22 to December 1, 1941.[1] The very fact that Hitler, in reporting German casualties for the first five months of the war against the Soviet Union, named a figure close to the million mark shows that casualties had reached an unprecedented scale.

At the end of the first year of war against the U.S.S.R. the nazis published the following casualty figures: 271,612 killed and 65,730 missing. It was obvious to all that Hitler's figures were far short of the truth. For example, the *New International Yearbook* called these figures ridiculous in the extreme and quoted calculations made by American military observers who estimated the number of Germans killed by December 11, 1941, at 1,300,000,[2] i.e., eight times greater than reported by Hitler. Subsequently the nazis raised the figure of their losses. In a speech on November 10, 1942, Hitler named the figure of 350,000 killed and, by March 21, 1943, he had raised this to 542,000 German soldiers and officers killed to date in World War II. Actually, total casualties (i.e., including wounded, prisoners and missing), even in official nazi data, ran into millions. This graphically illustrated the scale of the losses inflicted on the nazis by the Soviet Army.

Shortly before the end of the war, Hitler was compelled to admit the huge losses sustained by the Germans on the Soviet-German front. In one of his hysterical speeches, Hitler, in an address to the German people, said: "You have already made such a colossal investment in blood that you cannot back out now; millions of men have died and more must be sacrificed...." In counting only the number of killed Germans, Hitler was forced to talk in terms of millions. Two months before his death, Hitler announced that Germany had lost 12.5 million in killed and wounded, of whom half were killed.[3] By this he himself admitted the falsity of all earlier fascist statements on German losses.

On June 6, 1944, Anglo-American forces crossed the English Channel and landed in Northern France, estab-

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[1] *World Almanac*, 1943, p. 47.
[2] *New International Yearbook*, 1941, p. 748.
[3] S. K. Padover, "German Casualties; New Evidence", *Nation*, Vol. 162, March 2, 1943, p. 255.

lishing the Second Front at the time when Soviet victory over Germany was ensured. At the end of September 1944, it was reported in the British House of Commons that German casualties in France amounted to approximately 400,000 men.

On November 7, 1944, the nazis officially announced that over the preceding six months their casualties amounted to 1,060,000 men on the Western front and 194,000 in Italy.[1] However, this number includes chiefly prisoners. Altogether some 54,000 Germans were killed in action against Britain and the United States, whereas the number of Germans killed on the Soviet-German front ran into millions.

Although more than 25 years have passed since the end of the war, Germany's losses still cannot be established with sufficient accuracy. The main source of confusion is the category of "missing".

To minimise the number of killed the German military command included a huge number of dead soldiers and officers among those listed as "missing". Expecting the return of a considerable number of these "missing" soldiers, relatives supplied information during the registration of "prisoners of war and missing, still abroad", conducted in the Federal Republic of Germany in March 1950. This registration "established" that 1,407,000 men "have not yet returned" from the war. On these grounds the Bonn Government demanded the return of all prisoners of war ostensibly still held in the Soviet Union.

Such demands were absurd. During the war Soviet forces captured many German soldiers and officers, but a few years after the end of the war they were all repatriated. It was pointed out in a TASS statement of May 5, 1950, that from 1945 to 1950, 1,939,000 German prisoners of war were released from captivity. Only 13,532 men convicted of serious war crimes or still under investigation, i.e., less than 1 per cent of the total, remained at that time in the U.S.S.R. Nevertheless, Bonn politicians continued to demand the return of men who had perished during the nazi "campaign in the East". On orders of their masters, West German statisticians, in counting war

[1] *World Almanac*, 1945, p. 38.

casualties continue to this day to differentiate between "killed" and "missing", although ample time has passed since the end of the war for these "missing" to turn up if they really existed.

Another source of confusion is the practice of *counting some war casualties together with civilian losses.* To underestimate war casualties and exaggerate losses from "resettlement", West German statisticians list a considerable number of deaths in the column of civilian casualties, and correspondingly reduce war casualties. Establishing the total number of "victims of expulsion" is a dubious statistical operation, and it is not corroborated in the "population balance" compiled by the Statistical Board of the Federal Republic of Germany.

It should also be noted that geographical boundaries can alter the size of losses. The inclusion or exclusion of Sudeten Germans or Alsatians can make a big difference in total German losses.

Let us examine the information on which West German statisticians base their calculations of war losses.

On December 21, 1949, the Federal Government, as pointed out earlier, decided to make a registration of all German prisoners of war "still abroad" and also of all "missing soldiers, officers and civilians". This registration was conducted from March 1 to 11, 1950. All soldiers and officers who at one time had written from captivity and had not yet returned were included in the category of prisoners of war. Among the missing were classed all soldiers and officers who had not yet returned and whose death was not established. The West German population was requested to provide all relevant information by filling in a special form. To avoid double count, the following procedure was instituted: the wife was the first to give information about a "missing" person; in the absence of a wife, his parents; in the absence of parents, children, and in the absence of children, other relatives.

As a result of this registration, Bonn statisticians established that "two million Germans were missing or still in captivity". It was ascertained that of the two million, only 100,000 had corresponded with their relatives, while there had been no news whatsoever from the remaining

1.9 million. Distributing the "missing" according to their family status, Bonn statisticians established that 510,000 wives, 1,327,000 parents and 609,000 children under age were waiting for them. Thus, some 2.5 million people "were awaiting the return of their husbands, fathers and sons".[1] But all these "missing" had actually perished long ago in the war conflagration.

That the overwhelming majority of "missing" were killed can be seen from local surveys. For example, a survey conducted in Bavaria from mid-1947 to mid-1949, i.e., the period of the wholesale repatriation of POW's from the Soviet Union, showed that only one per cent of those "missing on the Eastern front" returned home. The supposition of West German experts from the Missing Persons Service that 50 per cent of the missing perished in captivity, 25 per cent died in battle and 25 per cent survived in captivity[2] proved to be utterly wrong. Subsequently, Bonn statisticians were forced to accept the facts and list the "missing" among the killed.

West German statisticians have compiled the following balance of Germany's population for 1939 and of the German Democratic Republic and the Federal Republic of Germany for 1955.[3]

Balance of the Population for 1939-55

Items of balance	Thousands
Population of Germany (within the boundaries of December 31, 1937) on May 17, 1939	69,310
From 1939 to 1955 the population increased	
a) due to births	18,700
resettlement of Germans from abroad	4,850
Total increase	23,550
b) Decrease due to civilian deaths	14,150
Civilian deaths from bombings	410
Death of population in frontal zone	20
Killed soldiers and officers of the Wehrmacht	3,760

[1] *Wirtschaft und Statistik*, H. 5, 1956, S. 153.
[2] G. Frumkin, op. cit., pp. 76, 83.
[3] *Wirtschaft und Statistik*, H. 10, 1956, S. 494.

Germans who resided in the Eastern areas *	1,040
Losses from shifts and resettlement	1,260
Emigrated and killed Jews **	200
Emigrated Germans	500
Others	160
Total decrease	21,500
Excess of increase over decrease	2,050
Population as of December 31, 1955	71,360

* Territories ceded by Germany after the war under the Potsdam Agreement.

** Elsewhere these losses are referred to by Bonn statisticians as: «Jews who perished from measures taken by the Third Reich». These statisticians seem to consider the furnaces of Majdanek and Oswiecim in which the fascists burned millions of «non-Aryans» merely as «measures» taken by the state. West German statisticians may consider themselves worthy successors to the Third Reich!

Possibly the balance as a whole gives a correct picture of population changes between 1939 and 1955, but there is no certainty that the separate items have been counted properly. This is particularly true of the war losses. The figure of 3,760,000 dead German soldiers and officers minimises the actual losses. First, the authors of these computations themselves point out that the number of killed does not include all "dismissed from the army who subsequently died from wounds and diseases contracted at the front".[1] And there were probably a fair number in this category since only men whose health had been completely undermined at the front were discharged from the German Army. The death of these former servicemen was recorded in the column of "dead among the civilian population", whereas their death actually differed little from casualties at the front. Second, there is no doubt that in the final period of the war when the Volkssturm was drawn into military service, many casualties were listed among civilian deaths. Third, it is quite possible that losses among the SS, Gestapo and other categories were not included among the Wehrmacht losses.

The figure of 3,760,000 also appears doubtful since the balance of the population given in the table on p. 109 presents no adequate grounds for it. There is every reason to hold that German losses within the frontiers as

[1] *Wirtschaft und Statistik*, H. 10, 1956, S. 495.

of December 31, 1937, considerably exceeded 4,000,000 soldiers and officers.

If we add the losses of satellite countries the total number who perished in the Hitlerite army amounts to approximately 5.5 million, the overwhelming majority of whom perished in the war against the Soviet Union. This figure is confirmed by reports from the Soviet Information Bureau published after individual military operations. According to these data, nazi losses exceeded 3 million in killed. Although the period covered by these reports comprises only one-third of the entire duration of the war it summarises the biggest German losses, and the figure of 5.5 million killed for Germany and her former allies seems close to reality.

The scale of German war losses may, to a certain extent, be judged by the sex ratio as indicated by population censuses. The first post-war population censuses con-

Population of Germany According to the Census of October 29, 1946 *

(thousands)

Occupation zone	Males	Females	Entire population	Excess of females
Soviet				
Brandenburg	1,074	1,462	2,536	388
Mecklenburg-Vorpommern	922	1,227	2,149	305
Saxen-Anhalt	1,808	2,354	4,162	546
Thuringia	1,280	1,663	2,943	383
Saxony	2,335	3,208	5,543	873
Total . . .	7,419	9,914	17,333	2,495
American	7,554	9,129	16,683	1,575
British	10,427	12,368	22,795	1,941
French	2,633	3,307	5,940	674
Berlin (all sectors) . .	1,290	1,890	3,180	600
Total . . .	29,323	36,608	65,931	7,285

* Data for the Soviet occupation zone are taken from an article in *Statistische Praxis*, H. 2, 1947, S. 30.

ducted in Germany in 1945 revealed a huge "shortage" of men. For example, in the Soviet occupation zone there were only 209,000 men from 22 to 25 years, while, according to the 1939 census, there should have been 623,000: similarly there were only 177,000 aged from 25 to 30 years instead of the projected 480,000, [1] etc. A similar situation was observed in the other zones. [2]

Throughout 1946 many German POWs returned home. The excess of females was reduced but still remained considerable. According to a population census conducted by the Control Council on October 29, 1946, the following number of males and females were registered throughout Germany.

At the end of 1946, there were 7.3 million women more than men. But in later years prisoners of war came back and the excess was somewhat reduced. The ratio of males and females in both German states in 1950 can be judged from the following table:

Males and Females in the German Democratic Republic and the Federal Republic of Germany in 1950 *

(thousands)

Age-groups	Males	Females	Excess of females
21—25	1,807	1,970	163
26—30	1,942	2,715	773
30—35	1,349	1,914	565
35—40	2,057	2,831	774
40—45	2,358	2,985	627
45—50	2,438	2,765	327
50—55	2,004	2,492	488
		Total	3,717

* Compiled on the basis of data in *Statistisches Jahrbuch der Deutschen Demokratischen Republik, 1958*, Berlin, 1959, S. 23; *Statistisches Jahrbuch für die Bundesrepublik Deutschland*, 1956, S. 41. (For the G.D.R. as of August 31 and for the F.R.G. as of September 13.)

[1] "Bevölkerungsbilanz 1945", *Statistische Praxis*, H. 2, 1946, S. 22.

[2] For the French zone see Breil, "Quelques résultats des recensements du 26 janvier 1946 de la zone française d'occupation en Allemagne", *Population* No. 4, 1946, p. 740.

The difference in the figures giving the excess of females (7.3 million in 1946 and 3.7 million in 1950) is explained, first, by the return of POW's and, second, by the fact that the figure for 1950 covers only ages called up during World War II. Our calculation included the age-group of Germans who were 50-55 years old in 1950 or, in other words, born in the period of 1896-1900 and thus served both in World War I and in World War II. By far not the entire excess of females in this age-group is explained by the war of 1939-45. If we take only half of it, the excess of females will be 3.5 million. However, this figure cannot be regarded as the number of killed German soldiers and officers. We must also take into account that hundreds of thousands of women in the same age-groups as the killed soldiers also perished during the war. Had they been alive in 1950, the excess of females would have been greater. Altogether, there were about 2 million civilian losses, of which 600,000-700,000 were women aged from 20 to 55. Consequently, had there been no losses among the civilian population, the excess of females by 1950 would have been 4.1-4.2 million and not 3.5 million.

From this it may be considered that the number of dead German soldiers and officers, including 200,000 Sudeten Germans, was 4.5 million.

German losses can also be determined by comparing the 1939 census with the post-war census. Let us, for example, draw up a table for men born between 1917 and 1926 (see p. 114).

The decline in the number of men over these 16 years gives us an idea of the losses inflicted on the German people by the war.

According to pre-war German mortality tables, the peace-time mortality rate of males aged between 20 and 25 was 8-9 per cent over a period of 20 years. As a result of the war, 42 per cent of all Germans born between 1917 and 1926 perished over a period of 16-17 years. True, these 42 per cent included not only soldiers and officers, but also civilian losses, i.e., those who perished from the nazi terror, bombing and other causes connected with the war.

Some authors give much smaller war losses for Germany. For example, *S. K. Padover* made a survey of four German towns and, on the basis of data supplied by local

Comparison of the Number of Males in Germany According to the 1939 Census With the Number of Males in the G. D. R. and F. R. G. as of January 1, 1956 *

(thousands)

Year of birth	1939 (whole of Germany)	As of Jan. 1, 1956 — G.D.R. and F.R.G.	Decline between 1939 and 1956	Decline per cent over 1939
1926	630	417	213	34
1925	662	413	249	38
1924	654	365	289	44
1923	658	363	295	45
1922	689	392	297	43
1921	735	411	324	44
1920	748	415	333	45
1919	570	320	250	44
1918	375	215	160	43
1917	363	208	155	43
Total	6,084	3,519	2,565	42

* Comparing the results of the 1939 census with data for 1956, one must bear in mind that data for the German Democratic Republic and the Federal Republic of Germany do not include the male population of West Berlin and the Saar Province. However, this is approximately compensated for by the inclusion in 1956 of Sudeten Germans, who in 1939 resided on Czech territory.

priests on their parishioners from September 1, 1939, to October 1944, established the following losses.

Losses for Four German Towns

Town	Population	Killed	Per cent of population
Breinig	3,000	74	2.5
Bardenberg	4,100	90	2.2
Fischeln	9,000	200	2.2
Frecheln	16,000	400	2.5

Taking 2.5 per cent as the average percentage for Germany, Padover arrives at the figure of 1,875,000 killed soldiers and officers. Adding another 500,000 for the period from October 1944 to the end of the war, he estimates the total number of killed at 2,375,000 and, together with bombing casualties, at 2,875,000.

These calculations are wrong. First, they include only part of the missing, while in actual fact the vast majority of them should be listed among the killed. Second, the source of this information is by its very nature incomplete and, third, the four small towns studied by Padover cannot be considered sufficiently characteristic for the whole of Germany. Results of the 1950 registration show that the percentage of missing fluctuated considerably in different Länder of the Federal Republic. For example, while in Bremen it was 1.76 per cent and in Hamburg 1.78 per cent, it soared to 2.81 per cent in Schleswig-Holstein, i.e., nearly 55 per cent higher than in Bremen.[1] In general, rural areas showed a considerably higher percentage of missing than cities (2.91 per cent and 2.33 per cent respectively). This is easy to explain: in the cities, part of the men of call-up age were exempted from active service because they were working in industry; consequently, the very fact that Padover surveyed only towns depreciates his calculations.

Other authors, too, are guilty of grossly underestimating German losses. For example, the *World Almanac* for 1956 names the figure of 2.1 million killed. There is even mention made of the figure of 1.6 million killed. Evidently these authors all proceeded from the premise that the "missing" would soon return to their families.

On the other hand, there are those who greatly overestimate German losses. For example *A. Sottile* would have us believe that 8.4 million German soldiers and officers perished,[2] whereas the total strength of the entire

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[1] Rei, "Die Kriegsgefangenen und Vermissten aus dem Bundesgebiet", *Wirtschaft und Statistik*, H. 1, 1950, S. 8.

[2] A. Sottile, "Le bilan de la deuxième guerre mondiale", *Revue de droit international, de sciences diplomatiques et politiques* No. 3, 1945.

German army was only 8 to 9 million.[1] It is obvious that this was a hasty assessment, made immediately after the war ended.

Of considerable interest are official figures on German losses which were not intended for publication. On July 29, 1945, Reuters announced that top secret archives relating to German war losses from September 1, 1939, to November 30, 1944, had been found in Flensburg in the home of ex-General Reinecke, head of the Propaganda Department of the German Supreme Command.

According to these secret papers, German losses were (thousands)[2]:

Losses	Army	Navy	Air Force	Total
Killed	1,709.7	51.8	149.8	1,911.3
Missing	1,540.8	32.2	141.0	1,713.0
Total . . .	3,250.5	84.0	290.8	3,624.3

Since "missing" meant virtually the same thing as killed the total number of German soldiers and officers who perished in the war, even according to official data, was 3.6 million. If we include the losses for December 1944 and January-May 1945, the total number of killed and dead in the Wehrmacht will exceed 4 million.

We possess yet another official source of information on German losses. Professor *Schramm* was the keeper of the "war diary" at the Wehrmacht Supreme Command. This "diary" was based on top secret monthly reports from military command entitled "Total Human and Materiel Losses of the Wehrmacht". The last report was made in March 1945 and included information up to the end of January 1945.

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[1] J. Kuczynski, *Die Geschichte der Lage der Arbeiter in Deutschland von 1800 bis in die Gegenwart*, Berlin, 1948, Bd. II, S. 245.

[2] *Whitaker's Almanac*, 1946, p. 300; *Neue Zürcher Zeitung*, July 30, 1945.

These data, published by Frumkin in his study of changes in the population of Europe, are presented in the following table (thousands) [1]:

Kind of Losses	Army	Navy	Air Force	Total
Killed	1,623	49	138	1,810
Missing	1,646	100	156	1,902
Total . . .	3,269	149	294	3,712
Other deaths: due to disease, accident, suicide or execution . .	—	—	—	191
Total . . .	—	—	—	3,903

Thus, the second source of secret data comes to almost the same conclusions as the first. What is surprising is the decrease in the number of killed by 100,000 after a further two months of the war. This shows how the nazis became confused even in their own carefully concealed statistics. It is also surprising that the figure of missing quoted for the Navy suddenly soared to more than three times its original size. However, if the entire group of missing is included among the killed, these sources give an approximately correct figure of German losses. If we add on losses for the last few months of the war, the total number of killed will exceed 4 million. *Sauermann* also accepts the figure of 4 million [2] although the German Institute of Economic Studies considers this figure merely as a minimum and sets actual German losses at 4-4.5 million dead soldiers and officers. [3] In the light of earlier calculations, based on the "excess of females" and secret

[1] G. Frumkin, op. cit., pp. 72-73.
[2] H. Sauermann, "Demographic Changes in Post-War Germany", *Annals of the American Academy of Political and Social Sciences*, Vol. 260, November 1948, p. 103.
[3] G. Frumkin, op. cit., p. 73.

data from the military archives, this figure is probably closest to the truth. [1]

The distribution of German losses by fronts is of great interest. The reader of the six-volume history, *The Second World War*, written by Winston Churchill may gain the impression that the Soviet-German front was of secondary importance. During the war, however, Churchill thought differently. In his message to Stalin on February 23, 1945, he wrote: "The Red Army celebrates its twenty-seventh anniversary amid triumphs which have won the unstinted applause of their allies and have *sealed the doom of German militarism*" (our italics. — *B. U.*). "Future generations will acknowledge their debt to the Red Army as unreservedly as do we who have lived to witness these proud achievements." [2]

The echoes of the last salvoes of World War II have long since died down and many Western historians are now inclined to present the events in an entirely different light. In their opinion, the fate of the war was decided neither at the walls of Moscow nor in the ruins of Stalingrad, nor on the Kursk Bulge, but at El Alamein or at the Normandy landing. To prove their point they even resort to falsified figures. For example, it is reported that Robert Ley, the nazi leader of the Labour Front, supposedly testified during his interrogation that losses on the Western front (including severely wounded) amounted to 3 million men. A similar figure was quoted by Jodl during his interrogation when he stated that the Germans had lost 3.1 million men on the Eastern front. [3] In other words, it is claimed that the Germans bore almost equal losses on both fronts. But these figures are absolutely untrustworthy.

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[1] A. Vagts, who made a special study of losses in World War II, assumes that Germany lost 4-5 million in killed. (A. Vagts, "Battle and Other Combatant Casualties in the Second World War", *Journal of Politics*, Vol. 7, November 1945, p. 418.)

[2] *Correspondence Between the Chairman of the Council of Ministers of the U.S.S.R. and the President of the U.S.A. and the Prime Minister of Great Britain During the Great Patriotic War of 1941-45*, Vol. I, Moscow, 1957, pp. 305-06.

[3] S. Ledermann, "La population de l'Allemagne", *Population* No 1, 1947, p. 85.

For a proper appraisal of the role played by the various fronts, we shall draw on material from the German secret archives found in Flensburg.

Distribution of German Land Force Losses by Fronts Prior to November 30, 1944 *

Fronts	Killed	Missing	Killed	Missing
	(thousands)		(per cent of totals)	
Western front before D-day	66	3	3.9	0.2
Western front from D-day	54	338	3.2	21.9
North Africa	12	90	0.7	5.8
Italy	48	97	2.8	6.3
Balkans	24	12	1.4	0.8
Russia	1,419	907	83.0	58.9
Home front (presumably due to air attacks)	64	1	3.7	0.0
Not distributed by fronts **	23	93	1.3	6.1
Total	1,710	1,541	100.0	100.0

* *Whitaker's Almanac*, 1946, p. 300 (percentages were calculated by us).
** Calculated on the basis of the difference between the total and the sum of the figures for the various fronts.

Thus, the Soviet-German front accounted for more than four-fifths of all killed and almost three-fifths of all missing in the German land forces. These data prove irrefutably that it was the Soviet Army that bled white the nazi hordes. In World War I, the bulk of German losses were inflicted on the Western front (see *Fig. 8*).

Other material also proves that the bulk of the Nazi Army perished on the Eastern front. In his survey of four German towns Padover established that "about three-fourths of all the dead were listed as killed on the Russian front".[1]

[1] S. K. Padover, op. cit., p. 256.

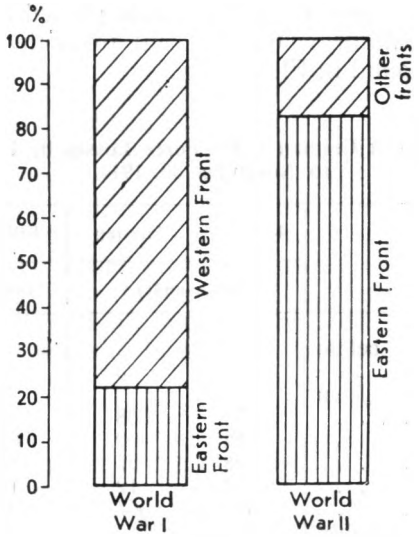

Fig. 8. A Comparison of the Composition of German Losses in the Two World Wars

The German people sustained colossal losses in World War II. They were more than double those in World War I. No war throughout the history of Germany had caused such wholesale slaughter of her manpower.

The following "age pyramids" clearly show the huge scale on which Germany's male population perished as a result of the two world wars (see pp. 121-122).

The pyramid on page 121 (*Fig. 9*) shows the sex and age composition of Germany's population as of January 1, 1910, and the one on page 122 (*Fig. 10*), the population of the two German states as of January 1, 1956. Their comparison graphically shows the tremendous losses suffered by the German people as a result of the two futile attempts of German imperialism to gain world supremacy.

The first pyramid illustrates the usual sex and age composition of the population, with the characteristic decline in the number of persons with the increase in age. The strips reflecting the number of people in the given age and sex group become narrower and narrower until,

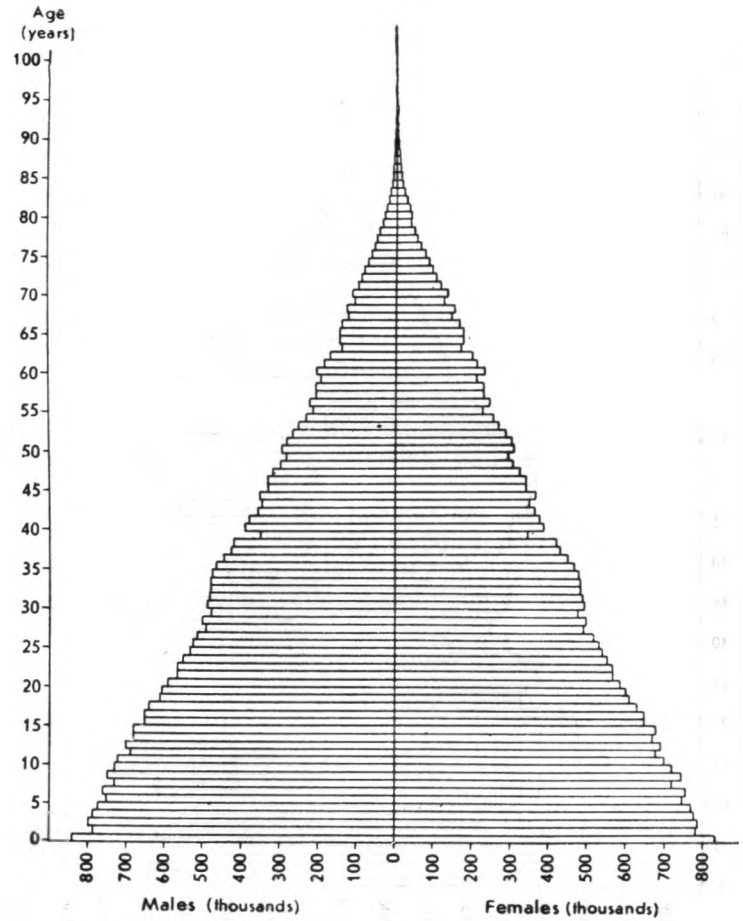

Fig. 9. Age Pyramid of Germany's Population in 1910

at the age of 90, they are hardly noticeable. It is important to note that the strips grow shorter both for males (left of the centre line of the pyramid) and females (right of the centre line).

In the second pyramid no trace remains of the systematic shortening of the strips with the increase in age. The configuration of the pyramid fully reflects the tragedy suffered by the German people in the course of the two

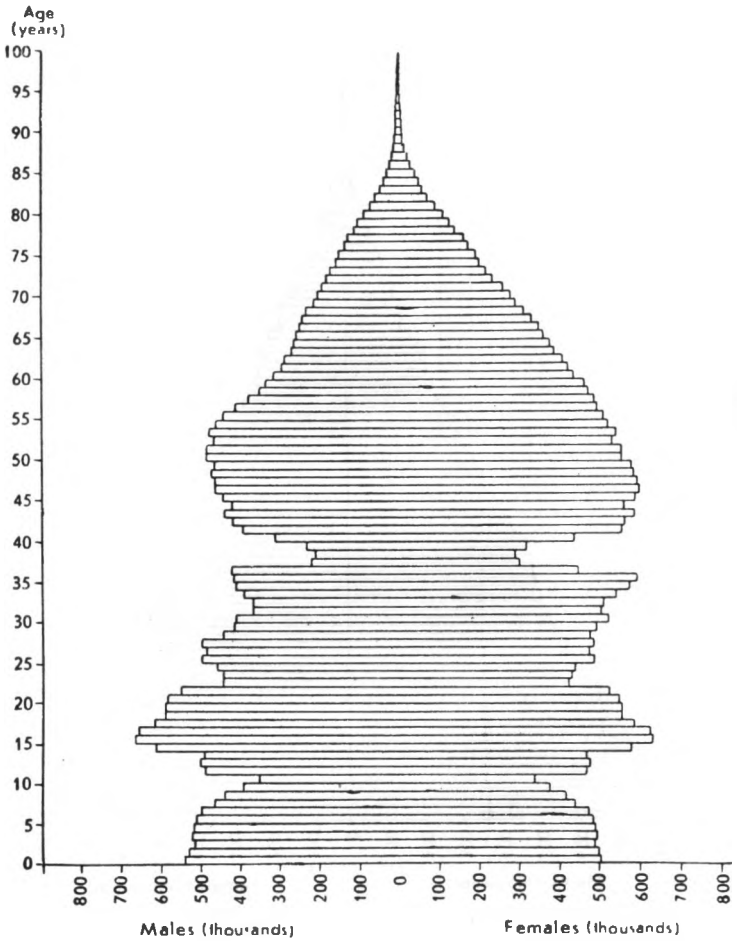

Fig. 10. Age Pyramid of the Population of the G.D.R. and the F.R.G. in 1956

cruellest wars in history. Beginning with the age of 28 (towards the end of the war they were 18 years old) the excess of females is clearly to be seen. Only in the oldest age-groups can the excess of females be explained by the greater longevity of women over men.

This pyramid also illustrates the impact of war on the drop in births: the shortening in the strips (both for men and women) at the age of about 40 is a result of the drop in births during World War I. The shorter strips at the age of about 10-12 is a result of a fall in births during World War II.

This drop in the number of males due to war has greatly upset the sex ratio. World War I sharply altered the normal sex ratio. Even prior to that war, according to the 1910 census, there were 1,026 females per 1,000 males while immediately after the war, in 1919, there were 1,101 females. Gradually this excess of females was smoothed over: in 1925 it decreased to 1,067, in 1933 to 1,058 and in 1939 to 1,048.[1] Thus, even 20 years after World War I, the 1910 proportion had not yet been restored.

The next war upset the normal sex ratio even more, affecting particularly the 25 to 50 age-group. In 1950, there was the following number of females per 1,000 males in the German Democratic Republic and in the Federal Republic of Germany:

Age	
25-30	1,398
30-35	1,419
35-40	1,376
40-45	1,265
45-50	1,134

The greatest "shortage" of males in Germany is among those born from 1915 to 1919, for it was these men that were to be the most active participants in World War II. The generation born from 1920 to 1924 also suffered greatly. For example, according to the Imperial Invalids' Union, of each 100 Germans born in 1924, 25 were killed or missing, while 31 suffered severe injuries.[2]

These figures show that the losses sustained by the German people were great not only in absolute figures, but relatively too. Many years will pass before these wounds inflicted on the German people by the nazis are healed.

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[1] *Wirtschaft und Statistik* No. 23, 1940, S. 520.

[2] *Bélaya kniga o vozrozhdenii germanskogo imperializma* (White Paper on the Revival of German Imperialism), Moscow, 1952, p. 10.

For an overall picture of fluctuations and the scale of Wehrmacht losses from September 1, 1939, to January 1, 1945, we shall make use of material giving monthly data on all killed and missing, published in the *Statistical Yearbook of the F.R.G.* for 1960. Among the missing

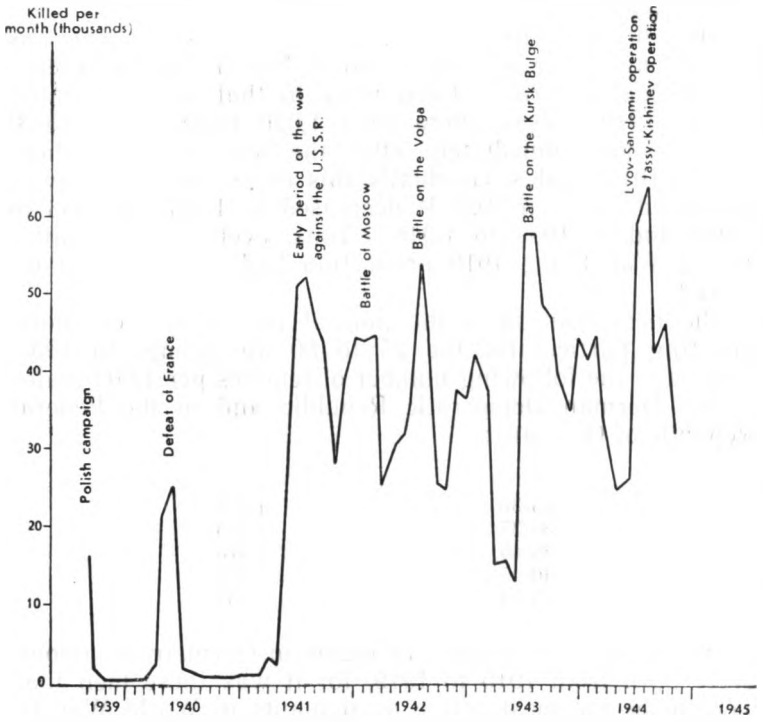

Fig. 11. Number of Killed Wehrmacht Soldiers and Officers by Months in 1939-44

were many servicemen who were in captivity and returned only after the war. Although they obviously cannot be classed among the killed, they are of interest for characterising the casualties of the nazi army during different periods of the war (see *Fig. 11*).

The diagram shows sharp upswings of the curve during separate military operations. We see how it climbed upward since the war against the Soviet Union. The Battle of Moscow, the Battle on the Volga and the Battle on

the Kursk Bulge steeply sent up losses during the war.

In any account of German casualties, mention should be made of the role of the guerrilla movement, which inflicted telling blows on the invaders. "The guerrilla and the Resistance movement came as a complete surprise to the German command", writes Lothar Rendulic, a former Wehrmacht general. [1]

The guerrilla movement assumed a particularly large scale in the U.S.S.R. Behind the enemy lines Soviet people waged a war full of dangers and deadly risks. According to incomplete data, some 260,000 guerrillas operated in occupied regions of the Russian Federation, 220,000 in the Ukraine and 374,000 in Byelorussia. There were also guerrilla units in the Baltic Republics. [2] Altogether more than one million Soviet people participated in guerrilla warfare. As a result of their operations, hundreds of thousands of Hitlerites were killed in battle or perished under the debris of wrecked trains. In the Leningrad area alone guerrillas wiped out more than 104,000 enemy soldiers and officers in 32 months. The Ukrainian guerrillas killed and wounded 465,000 nazis, and in Byelorussia some 500,000 German soldiers and officers were put out of action by guerrilla operations in the first three years of the war. Altogether the Soviet guerrillas killed, wounded and took prisoner 1.5 million Germans and their accomplices. They derailed 18,000 enemy trains and blew up and set fire to hundreds of munition dumps. Their activities tied down a considerable part of the nazi armies.

Yugoslav guerrillas also inflicted heavy losses on the Germans. From 1941 to 1944, according to the Yugoslav radio, guerrillas killed 65,000 nazis in Croatia. Italian guerrillas were very active. In January 1945, Radio Rome reported that in 1944 Italian guerrillas killed 10,000 fascists, the majority of whom were Germans. The French Resistance, too, dealt the nazis a considerable blow. French maquis killed more than 1,500 German soldiers and officers in the department of Isère alone from November 1942 to August 1944. Units of the Greek People's

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[1] L. Rendulic, *Bilanz des zweiten Weltskrieges*, S. 101.

[2] *Istoriya velikoi otechestvennoi voiny*, Vol. 6, pp. 255-56.

Liberation Army fought energetically against the invaders. They killed more than 16,000 German soldiers and officers, not counting German losses in East Macedonia, Thrace, the Peloponnesus and on Crete.[1] The Germans also suffered considerable losses in battles against guerrillas in Poland, Bulgaria and Albania.

As for *Austrian* losses, the official figure of 143,000 killed soldiers and officers is deliberately minimised since it fails to include the 85,000 missing who never returned. On the basis of this data we arrive at a total number of 230,000 dead soldiers and officers.[2] But this figure, too, is underestimated, as proved by a comparison of the 1934 census and 1954 data giving the age and sex composition of the population. These materials can be utilised in two ways: first, taking into account only the number of males in the same age-groups and, second, from the angle of the excess of females.

Number of Males in Austria in 1934 and 1954 *

(thousands)

Years of birth	1934	1954	Decrease in the number of males between 1934 and 1954
1925–29	273	233	40
1920–24	299	214	85
1915–19	196	143	53
1910–14	293	228	65
1905–09	294	242	52
1900–04	288	243	45
Total . . .	1,643	1,303	340

* *Statistisches Handbuch für die Republic Österreich*, 1955, S. 6; 1957, S. 8.

We have compared data for 1934 and 1954 for the following reasons: males who in 1934 were in the age-group of 5-10 years, 20 years later, in 1954, were in the 25-30 age-group, similarly the group of 10-15 years in 1934 corresponded to the group of 30-35 years in 1954, and so on. Thus, it is possible to establish to what extent definite generations are decimated (provided there have been

[1] L. Mavroidis, *Grechesky narod nepobedim* (The Greek Reople Are Invincible), Moscow, 1949, p. 49.

[2] G. Frumkin, op. cit., p. 38.

no migration processes). In Austria, these processes were insignificant and could not substantially affect the results.

Altogether, in the six age-groups born between 1900 and 1929, the number of males decreased by 340,000. But an adjustment should be made for normal mortality. According to Austrian mortality tables for 1949-51, of 1,000 newborn infants 909 lived up to the age of ten, 897 up to 20, 877 up to 30 and 851 up to 40 years. Consequently, the probability of a ten-year-old boy living to 30 equals $877 : 909 = 0.965$. The probability of a 20-year-old living to 40 is $851 : 897 = 0.951$.

The "natural" decrease for all these age-groups can be taken as an average of 4 per cent in 20 years. This means that of the 1,643,000 males in Austria in 1934, 96 per cent, or 1,587,000, should have survived to 1954 had there been no war. Actually, however, there were 1,303,000 in 1954, or some 284,000 less. From this figure we have to deduct those males among the civilian population who perished during the war; this number did not exceed 10,000-15,000. However, we must also take into account the fact that the age-groups we presented did not include all the ages who participated in the war since some of those who perished in World War II were born at the end of the 19th century. Taking into account these two factors, it may be assumed that about 270,000 Austrian soldiers and officers perished in the war.

We can arrive at approximately the same figure by a computation based on the excess of females.

Males and Females in Austria in 1954 *

(thousands)

Age-groups	Males	Females	Excess of Females
25—29 . . .	233	258	25
30—34 . . .	214	291	77
35—39 . . .	143	189	46
40—44 . . .	228	287	59
45—49 . . .	242	288	46
50—54 . . .	243	277	34
Total . . .	1,303	1,590	287

* *Demographic Yearbook*, 1957, p. 598.

In 1934, in the same age-groups, the excess of females was 5,000, consequently the excess increased by 282,000 chiefly as a result of the death of males during the war. Thus the figure of losses of 230,000 given at the beginning is underestimated by approximately 50,000.

The losses of fascist *Italy* were a mere fraction of German losses. At the beginning of World War II, Italian troops had to fight only a few days on the French frontier. However, Mussolini had another enemy, Britain, against whom he fought in Africa.

The 1940-42 campaign in East Africa ended in the complete rout of the Duke of Aosta's Army of 300,000 men and the loss of Ethiopia, British Somaliland and Eritrea. The Italians, according to British data, lost 100,000 men in prisoners and 19,000 in killed. But the Italian fascists did everything to conceal this rout from the population and falsified the figures in the official monthly reports. For example, it was officially reported that altogether 26 men were killed in East Africa in November 1940, 41 in December, 127 in February 1941, 159 in March and 3,270 in April.

The war in Libya, which dragged on for several years, claimed a greater toll. As many as 400,000 Italians were taken prisoner by the British in Africa between 1940 and 1943.

The Italians also suffered considerable casualties in the war against Greece. According to figures cited by Mussolini in his speech on June 10, 1941, to mark the anniversary of Italy's entry into the war, 13,502 men were killed in Greece on land alone. If we add the thousands of soldiers and sailors who drowned and the thousands of missing, and bear in mind that Mussolini minimised the losses of the land army, we can safely say that tens of thousands of Italian servicemen were killed and drowned in the course of the fighting in Greece.

The Italian divisions suffered big losses in the war against the Soviet Union. When he declared war on the U.S.S.R., Mussolini expected Hitler to defeat it with his own forces, thus leaving Italy free to share in the spoils. But the tremendous losses borne by the German Army in the very first months of the war against the Soviet Union compelled Hitler to press Mussolini for greater participa-

tion in the hostilities. At the end of August 1941, during a meeting with Hitler on the Eastern front, Mussolini agreed to send large Italian contingents to the Soviet-German front. A special expeditionary corps, subsequently named the 8th Army, was formed in Italy. By the autumn of 1942 there were 10 Italian divisions on the southern front. All of them were eventually routed by the Soviet Army. The Italian troops suffered heavy casualties in the summer battles. The offensive launched by the Soviet Army at the end of 1942 in the middle reaches of the Don led to the defeat of the Italian Ravenna, Celere and other divisions. In January 1943, Soviet troops breached the enemy defence line on the Voronezh front and destroyed the Alpine Corps, thus completing the rout of the Italian expeditionary forces. About 60,000 Italian soldiers and officers were killed in the course of these operations.

Yugoslav partisans also exacted a big toll from Italy. Even the fascist *Giornale d'Italia* admitted on July 1, 1942, that "constant and heavy fighting has been going on for many months in Yugoslavia". Up to 20 Italian divisions were engaged in this war. In July 1942 alone, the occupation forces lost 6,550 killed in battles against guerrillas, more than half of the casualties being Italians. According to Swiss newspapers, in the first two years of war alone, Yugoslav guerrillas disabled 35,000 Italian soldiers and officers.

The Tunisian operations and the war for the liberation of Italy also resulted in the death of tens of thousands of Italian servicemen. To this should be added naval losses. In April 1941 alone, according to official data, 3,921 men were reported missing in the Navy. Air Force losses also ran well into the thousands.

It is obvious that Italy sustained heavy losses, yet Mussolini did everything possible to minimise them. For example, in his speech on December 2, 1942, he said that in 30 months of war the Italian Armed Forces had lost 94,212 in killed, including 40,588 in the Army, 33,500 in the Navy, and 20,124 in the Air Force.[1] Actual losses were much higher. In the last stage of the war, some 17,000 men were killed in the Italian Army which fought on the side

[1] A. Vagts, "Battle and Other Combatant Casualties in the Second World War", *Journal of Politics*, Vol. 7, September 1945, p. 415.

of the anti-Hitler coalition.[1] Total Italian losses cannot be determined with any great precision since there are no official data on Italian losses in World War II. In March 1946, the Milan Institute of Economic Studies estimated the losses as follows: Army 200,000, Navy 26,000, and Air Force 7,000, making a total of 233,000.[2] But these figures do not include the large number of missing, most of whom perished. Frumkin rightly holds that another 100,000 should be added, bringing the total of perished soldiers and officers up to 330,000. In addition, allowance must be made for losses among the guerrillas. The guerrilla movement in Italy led by the Communist Party, assumed a large scale and inflicted telling losses on the fascists. Altogether 71,000 people perished in the Italian guerrilla movement. Thus, *Italy's total war losses, not counting losses among the civilian population, amounted to 400,000 men.*

Finland, too, suffered considerable losses in World War II. Altogether, according to official data, some *84,000 soldiers and officers* perished in the war.[3]

While Finland mobilised the highest percentage of males among the German satellite countries, *Rumania* held first place among them as regards the actual size of the army.

Rumanian forces sustained heavy losses in the very first months of the war, particularly in fighting for Odessa and the Crimea. According to official figures, the Rumanian Army lost 160,000[4] men in killed, wounded and missing in the first year of war against the Soviet Union. The *total number of Rumanian soldiers and officers who perished in the war is set at 300,000.*[5]

Total losses of the *Hungarian* Army in the war against the U.S.S.R. are estimated at 160,000. If we take Hungary as it is within its present frontiers, the number of killed and dead soldiers and officers is reduced to 100,000. However, an additional 40,000 Hungarian soldiers and officers perished in battles on Hungarian territory. Thus, total Hungarian losses in World War II (within the pres-

[1] *World Almanac*, 1946, p. 45.
[2] G. Frumkin, op. cit., p. 102.
[3] G. Frumkin, op. cit., p. 58.
[4] *World Almanac*, 1943, p. 47.
[5] G. Frumkin, op. cit., p. 131.

ent-day frontiers) are estimated at 140,000.[1] *Snijder*, in his special study of Hungarian war casualties, arrives at an almost identical figure. He, too, holds that some 100,000 Hungarian soldiers and officers perished on Soviet territory; 24,000 soldiers and officers were killed during the siege of Budapest and 12,000 died of other causes, giving a total of 136,000 dead.[2]

The former puppet state of *Slovakia* also took part in the war against the U.S.S.R. and, by the autumn of 1942, one Slovak division had fought at the front. In addition to Slovaks, Hitler forcibly mobilised Czechs and other Slavonic peoples and, dispersing them among Germans, forced them to fight against the Soviet Union.

Hitler tried to embroil the peoples of other nazi-occupied countries in the war against the U.S.S.R. A special network of fascist agents recruited "volunteers", releasing criminals from prison to complement various legions. In this way the Flanders, Walloon, Dutch, Danish, Norwegian, French and Croatian legions were set up but were all defeated before long.

The French Legion lost half of its men in the very first battles, early in December 1941; the strength of the Norwegian Legion was reduced by half after two months' fighting, and of the 2,100 men in the Dutch Legion only 700 remained in the autumn of 1942. The Flanders Legion lost almost two-thirds of its men after several days of battle. The Croatian Legion originally had 3,000 men, but after Stalingrad it was so decimated that hardly a company remained. The Danish Legion, which consisted of Danish fascists, suffered big losses in the 1942 summer battles, and the Spanish Blue Division was routed by the Soviet Army in its very first battles.

Of the former German satellites mention should also be made of monarchist *Bulgaria*. Bulgarian troops were utilised by Hitler to combat the Yugoslav guerrillas and subsequently in battles against the People's Liberation Army of Yugoslavia. In the course of this fighting, Bulgaria lost some 3,000 in killed, while altogether 10,000

[1] Ibid., p. 95.

[2] A. Snijder, "Évaluations sur les pertes en vies humaines subies par la Hongrie du fait de la deuxième guerre mondiale", *Magyar statisztikai Szemle* No. 1-6, 1946, p. 4.

Bulgarian soldiers and officers perished in the war. Let us also mention that 3,700 Dutch and 700 Norwegians perished among the soldiers of the nazi armies.

Total losses for Germany and her satellites in three years of war exceeded 7,800,000 soldiers and officers in killed and prisoners.

On October 11, 1945, Prime Minister Attlee of Britain stated in the House of Commons that from September 1, 1939 to May 10, 1945, the German Armed Forces lost 7.4 million in killed and disabled as a result of wounds and diseases. [1]

The majority of the nazi forces perished under the assault of the Soviet Army. British M. P. Zilliacus stated that from documents captured by the British Army it followed that up to November 1, 1944, the Germans sustained 86 per cent of all their losses on the Soviet-German front.

The Soviet Union bore the main brunt of the war against nazi Germany and her satellites. This demanded the maximum exertion of all forces and great sacrifices by the Soviet people to save not only their socialist homeland but the entire civilised world. Millions of Soviet patriots laid down their lives to save their country from fascist enslavement and the Soviet people will never forget these immortal exploits.

The total number of Soviet soldiers and officers who perished in the war, including those who died from wounds or in captivity, was ten million. [2]

The losses of the other countries of the anti-Hitler coalition in World War II were much smaller.

In the first period of the war *Britain* did not sustain any particularly heavy losses. The British landed a considerable expeditionary force in France, but it engaged in little actual fighting. Prime Minister Neville Chamberlain reported in the House of Commons that in the first three months of the war, the British lost 2,100 killed sol-

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[1] *Whitaker's Almanac*, 1946, p. 300.

[2] See Statement made by I. S. Konev, Marshal of the Soviet Union, at a press conference arranged by the Ministry of Defence, Ministry of Foreign Affairs and the Soviet Journalists' Union on the 20th anniversary of Victory. *Sovetskaya Rossiya*, April 30, 1965.

diers and officers[1] A few months later the situation changed. In May 1940, the Germans captured Belgium and the Netherlands and their army swooped down on France. The British expeditionary force faced a critical situation. Next came the dark days of the Dunkirk evacuation in which the expeditionary forces lost all their materiel (2,400 guns, 700 tanks and 50,000 motor vehicles). But the British succeeded in saving their manpower. Of the 400,000 men in the expeditionary corps, 350,000 returned to Britain, but 40,000 fell into captivity. Dunkirk was the first big blow suffered by Britain in the war.

A few months after Dunkirk the nazis launched the Battle of Britain, massive air attacks which were to serve as a prelude to the invasion of the British Isles. But the high hopes Hitler placed on it did not materialise. In repelling the air attacks, the British Armed Forces suffered considerable losses. The British Army also sustained losses in Norway, Greece, on Crete and in Africa.

Subsequently, the situation at the fronts became more favourable for Britain. The liberation of the entire African continent demanded stubborn battles in Libya and particularly in Tunisia, which ended in the rout of Rommel's African Corps and of many Italian divisions. Next came the liberation of Sicily accompanied by big 38-day battles in which the British lost about 24,000 men.

A summary of the casualties of the British Armed Forces follows:

Casualties of the British Armed Forces in World War II

Categories of casualties	Over two years of war	Over three years o war	Over four years of war	Over five years of war	Over 5.5 years of war
Killed and dead from wounds	48,973	92,089	158,741	242,995	306,984
Wounded	46,363	88,294	159,219	311,500	819,818
Missing	29,756	226,719	78,204	81,603	
Taken prisoner	58,458	107,891	270,995	290,865	
Total	183,550	514,993	667,159	926,963	1,126,802

[1] *Mirovoye khozyaistvo i mirovaya politika* No. 1, 1940, p. 164.

The third year of the war, when casualties increased by 331,000, was the hardest for Britain. This was also reflected in the composition of the casualties. The number of missing rose sharply because the Government had no exact information about the fate of many soldiers and officers after the fall of Singapore, Hong Kong and other cities. Subsequently, the number of missing was cut by two-thirds. Most of those listed as missing were later transferred to the POW column. Some of them were killed. After recalculations, the number of missing accounted for only one-tenth of all casualties.

Distribution of casualties by various parts of the British Empire is of interest.

Losses of the British Empire in World War II *

(thousands)

Part of the British Empire	Over 3 years of war	Over 4 years of war	Over 5.5 years of war	Throughout the war
United Kingdom	275.8	388.0	685.6	755.3
India	102.0	109.8	163.5	179.9
Canada	10.4	19.7	89.2	101.5
Australia	54.0	74.3	87.3	95.6
New Zealand	19.3	25.7	36.7	39.9
Union of South Africa .	23.0	23.8	33.8	37.6
Other territories	20.5	25.8	30.7	36.2
Total . . .	505.0	667.1	1,126.8	1,246.0

* *Bulletin mensuel de statistique* No. 2, 1945, p. 33; No. 5, 1946, p. 189.

The population of the British Isles, as compared with the other parts of the British Empire, suffered the biggest absolute war losses, although in proportion to the population the biggest war losses were sustained by New Zealand. The smallest losses over the first four war years were suffered by Canada because Canadian units were trained for big land operations which began only later on in the war. [1]

[1] In the first four years of the war the composition of the losses of the Canadian Armed Forces was as follows: Navy 946, Army 9,547 and Air Force 9,204, a total of 19,697 servicemen.

In Italy, British forces lost 1,000-1,500 men in killed every month. Altogether 14,331 British soldiers and officers were killed from the moment of landing in Italy (early in September 1943) up to the capture of Rome (June 4, 1944).

The invasion of France entailed severe losses. In the first few weeks after the landing in Normandy, the British and Canadians lost 2,205 men in killed. Stiffer resistance by the Germans subsequently increased these losses. By the end of August 1944, i.e., in less than three months of hostilities, the British Armed Forces had lost 20,795 in killed, i.e., some 7,000 a month. In the next eight months of the war the British, however, lost less than in the three months following the invasion. Altogether the British and Canadian units on this front lost 39,599 in killed from the beginning of the invasion up to the end of the war.

Mention should be made of losses in flying personnel. Winston Churchill, in a speech delivered in the House of Commons on February 22, 1944, reported that, from the beginning of the war, the British Air Force had lost 38,000 pilots and other flying personnel in killed. Total war losses for the British Air Force amounted to 69,606 men.

The losses in killed [1] during World War II are distributed as follows [2]:

Parts of the British Empire

United Kingdom	244,723
Canada	37,476
India	24,338
Australia	23,365
New Zealand	10,033
Union of South Africa	6,840
Other territories	6,877
Total	353,652

[1] British statistics include all who died from wounds or by accident among the killed.

[2] *Bulletin mensuel de statistique* No. 5, 1946, p. 189.

The number of killed in the United Kingdom increased as follows: in the first three years of war 73,000 men were killed, or about 24,000 a year. That was the period of predominantly defensive operations. In subsequent years the losses in killed increased: 48,000 in the fourth year of war, 55,000 in the fifth and 69,000 in the sixth. Those were the years of Britain's most active participation in the war.

According to complete data published on June 6, 1946 in an official *White Paper*, 264,443 men of the British Armed Forces were killed from September 3, 1939, to August 14, 1945. As compared with data relating to the end of the war in Europe, the number of killed was increased by 31,000. This includes not only losses in the final stage of the war against Japan, but also those who died from wounds during this period and the missing whose death was later established.

Since U.K. losses in killed amounted approximately to two-thirds of all the killed in the British armed forces and to 60 per cent of all the missing it may be considered that the final number of killed for the Dominions and the colonies is approximately 20,000 greater as compared with the losses at the end of the war in Europe. This gives a figure of 388,000 killed in the British armed forces during World War II.

Britain sustained her main losses in the war against Germany and her satellites. In the war against Japan 30,000 servicemen[1] were killed, i.e., 11.4 per cent of the total number of dead British soldiers and officers.

American losses during World War II differ little in size from those of the British Empire.

In the first two years of war, the U.S. Armed Forces had relatively small losses. In the 27 months following the Japanese attack on Pearl Harbour, 40,657 American soldiers and officers were killed. But in 1944 American losses grew substantially, chiefly as a result of operations in Europe. This is shown by the following table:

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[1] *Statistical Digest of the War*, London, 1951, p. 13.

Losses of the American Army in Killed *

Theatre	As of October 31, 1944	As of January 31, 1945	As of June 30, 1945	As of October 31, 1944	As of January 31, 1945	As of June 30, 1945
	Absolute figures			Per cent of total		
European . .	45,316	75,808	116,044	54	58	61
Mediterranean	25,876	33,176	38,174	31	26	20
Pacific . . .	10,369	17,311	33,276	12	13	17
Asian	1,122	1,470	1,765	1	1	1
Others . . .	2,128	2,501	2,032 **	2	2	1
Total .	84,811	130,266	191,291	100	100	100

* Computed on the basis of data in the *World Almanac*, 1945, p. 38; 1946, p. 44; A. Vagts, op. cit., p. 413.

** The figure of killed as of June 30, 1945, is smaller than the previous figure because it does not include «other losses at sea».

In three years of war against Japan, American Army losses were small: more than 85 per cent were killed in the war against Germany and her allies. Only naval losses which amounted to 29,738 killed and 9,427 missing as of December 7, 1944, can be attributed chiefly to hostilities against Japan.

In the last six months of the war American losses rose steeply as is shown by the following table:

Casualties of the U.S. Armed Forces up to May 21, 1945

Category of casualty	Army	Navy	Total
Killed	183,563	43,534	227,097
Missing	52,746	10,709	63,455
Wounded	553,088	54,380	607,468
Prisoners	100,122	4,245	104,367
Total . . .	889,519	112,868	1,002,387

In the last months of the war hostilities against Japan sent up U.S. losses by 67,000. After the end of World War II the U.S. losses were as follows:

Casualties of the U.S. Armed Forces up to October 18, 1945 *

Category of casualty	Army	Navy	Total
Killed	208,966	55,633	264,599
Missing	19,892	9,573	29,465
Wounded	571,277	80,238	651,515
Prisoners	122,547	1,506	124,053
Total . . .	922,682	146,950	1,069,632

* A. Vagts, op. cit., p. 413.

By November 1, 1945, the number of dead had risen to 273,800 and missing declined to 27,200.

From May 21 to November 1, 1945, the number of missing was cut by more than half because in many cases their death was established; at the same time the number of killed increased proportionately. A considerable number of those listed as missing on November 1, 1945, were evidently not found either. Judging by subsequent, more detailed, U.S. military medical reports on the Army and Navy, those who died from wounds were also included among the killed.

The number of killed (excluding those who died from wounds) was as follows [1]:

Army:	
Killed in battle	192,798
Declared dead	6,058
Navy:	
Killed in battle	51,983
Total . . .	250,839

Thus, a quarter of a million American soldiers, sailors and officers were killed in World War II. Of this number

[1] *Preventive Medicine in World War II*, 1958, Vol. IV, p. 8; *The History of the Medical Department of the United States Navy in World War II*, Vol. 3, 1950, p. 78.

about three-fourths perished in the war against Germany and her former European satellites. [1]

Although the United States was at war with Germany and Japan from December 1941 on, American losses in the first two and a half years were insignificant, rising only after the opening of the Second Front. The dynamics of U.S. Army casualties can be judged by the following data which, however, cover only land forces. [2]

Casualties of the U.S. Army
(thousands)

Year	Killed	Wounded	Missing
1941	0.5	0.6	0.1
1942	3.6	5.2	32.6
1943	15.7	38.8	20.1
1944	100.4	337.3	93.3
1945	55.3	216.0	28.0

These data show that casualties for 1944 and 1945, or in other words, the last period of the war, comprised 89 per cent of all killed and 92 per cent of all wounded.

The *Yugoslavs* suffered great losses in the war against the Italo-German invaders. They formed a strong guerrilla army when the Hitlerites still felt themselves masters of the situation in a considerable part of Europe. The Yugoslav guerrillas, and later on the People's Liberation Army, inflicted telling losses on the Germans, Italians and the Ustasi. Marshal Tito in his speech in Zagreb on May 21, 1945, said that "in the struggle of all the United Nations our people sacrificed 300,000 young lives".

France sustained no substantial losses in the first period of the war against Germany. That was the period of what was called "phony war". The French High Command was refraining from stepping up operations. "For weeks on end neither side fired a shot." [3] The rulers of France preferred passively to watch the defeat of Poland by the

[1] The losses of the U. S. Army were distributed as follows among the various theatres of hostilities (killed): European, 116,000; Mediterranean, 38,000; Pacific, 33,000; other theatres, 4,000 out of the total of 191,000 as of June 30, 1945 (grouped according to data in *World Almanac*, 1946, pp. 44-45).

[2] *The Army Almanac*, U. S., 1950, pp. 662-63.

[3] S. Westphal, "The Year of Destiny", *Rokovyie resheniya*, p. 4.

Germans in September 1939. As a result of this policy losses were, at first, negligible.

At the end of December 1939, Premier Daladier stated in the Chamber of Deputies that up to November 30, 1939, i.e., in the first three months of the war, 1,136 people had perished in the Army, 260 in the Navy, and 42 in the Air Force. [1]

The breaching of the Dutch, Belgian and French defences in May 1940 by the Germans sharply changed the situation. Heated battles were fought, but losses were not as great as was thought at first. After France's surrender figures were published in the French press, which put French casualties at 1.5 million in killed and wounded. Some foreign newspapers rightly called this figure fantastic. This figure, they stated, was blown up to incredible proportions. In 40 days of war, France could not have suffered such losses. Moreover, in those critical days France had not made use of her entire war potential.

The French people, however, did not meekly bow their heads to the nazi conquerors and their famous Resistance Movement spread throughout France. Thousands of franc-tireurs perished in the struggle for their country's freedom. After the invasion of the British and American forces, the role of the Resistance Movement increased considerably. A regular French Army was formed from Resistance units and it took part in defeating the Wehrmacht. France lost 14,000 [2] men in killed after the opening of the Second Front. In addition, the losses of the army of Fighting France from the moment of France's surrender up to the invasion of the Allies, amounted to 11,000 killed and dead from wounds.

For a more complete account of French casualties the losses of Alsatians in the German army must also be considered. Altogether 130,000 Frenchmen were mobilised in Alsace and Lorraine, of which some 50,000 were killed (according to other sources, 40,000). France's total losses in World War II were as follows [3]:

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[1] F. Burgdörfer, *Krieg und Bevölkerungsentwicklung*, München und Berlin, 1940, S. 10.

[2] *World Almanac*, 1946, p. 45.

[3] J. Bourgeois, "La situation demographique", *Population* No. 1, 1946, p. 121; G. Frumkin, op. cit., p. 62.

Killed soldiers and officers of the French Army in 1939-40	92,000
" in 1940-45	58,000
Perished Resistance fighters	20,000
Frenchmen perished in the German Army (Alsatians)	40,000
Died in German captivity	40,000
Total	250,000

Thus, although in World War II France had no such bloody battles as those on the Marne in 1914 and at Verdun in 1916, she lost hundreds of thousands of soldiers and officers.

It is difficult to make any exact estimation of the losses of *Czechoslovakia.* It is estimated that 200,000 soldiers and officers from among the Sudeten Germans perished fighting in the ranks of the nazis.[1] We must bear in mind that Czechs found themselves on both sides of the front. On the one hand, Czechs forcibly mobilised by Hitler were dispersed in various units of the nazi army; on the other, Czechoslovak military units fought heroically in the ranks of the Soviet Army. The number of dead Czechs and Slovaks among servicemen of various armies is estimated at approximately 46,000 men.[2]

After the *Bulgarian* people had overthrown Hitler's accomplices, the Government of the Fatherland Front declared war on Germany and sent an army of almost 500,000 men to the front. For eight months Bulgarian forces fought on the side of the Soviet Army and actively participated in driving the Germans out of the Balkans and Hungary. During this time the Bulgarian Army sustained casualties of 32,000 in killed and wounded, including about 7,000 in killed.[3]

Here, too, the guerrilla movement played an active role in the fight against Hitler. In their efforts to crush the

[1] G. Frumkin, op cit, p. 50.

[2] E. M. Kulischer, *Europe on the Move*, New York, 1948, p. 280.

[3] From the declaration of the National Committee of the Fatherland Front. The number of killed is calculated on the basis of data in Kirtchev's *La guerre patriotique*, Sofia, 1946, pp. 45, 86.

Resistance Movement in Bulgaria the nazis offered a reward of 50,000 leva for the head of each guerrilla. In all more than 15,000 Bulgarian guerrillas perished.

The war losses of *Belgium* were small because the Belgian Army participated in military operations only during the "18-day campaign" in May 1940. According to official data, during this period, 9,300 soldiers and officers perished. Together with Resistance Movement losses, the figure reaches 10,000. [1]

Dutch war losses were also small. In 1940, in five days of fighting a total of 6,200 men were killed. [2]

The losses of *Luxemburg* are estimated at 4,000-5,000. Altogether about 25,000 soldiers and officers perished in the Benelux countries.

The population of *Poland* suffered tremendous losses during World War II; the figure of 6 million victims is generally accepted but it consisted overwhelmingly of civilians.

The number of killed Polish soldiers and officers, according to calculations of the War Reparations Office of the Presidium of the Council of Ministers of Poland, was as follows:

Losses of Poland in World War II *

	Killed, thousands
The 1939 September campaign (invasion of nazi forces)	66.3
First and second Polish armies in the East	13.9
Polish troops in France and Norway in 1940	2.1
Polish troops in the British Army	7.9
Warsaw uprising in 1944	13.0 **
Resistance Movement	20.0
Total	123.2

* *Report on the Losses and War Damage Inflicted on Poland from 1939 to 1945*, Warsaw, 1947, Russ. ed., p. 36.

** This figure does not cover civilian losses, including many young people who perished fighting in unorganised groups.

[1] G. Frumkin, op. cit., p. 44.

[2] *World Almanac*, 1946, p. 45.

This shows that 98 per cent of Polish losses were suffered by the civilian population: millions of women, children and aged were done to death by the nazis in the crematoriums of Majdanek, Oswiecim and Treblinka.

The losses of *Greece* in the war against Italy and Germany were 20,000 killed soldiers and officers, according to official data.[1] Higher figures for Greek losses were given in the press, but they possibly include civilian population. The figure of 708,000 deaths among servicemen given by Kulischer[2] is absolutely inexplicable. The entire strength of the Greek Army was less than this figure.

The losses of *Norway* were small. Two thousand Norwegian soldiers and officers were killed in the ranks of the Norwegian Army and Allied forces.[3]

Albania, even before the outbreak of World War II, was occupied by Italy and then by Germany, but the Albanian people never ceased their struggle against the fascist enslavers. It is estimated that some 28,800 Albanians were killed in guerrilla warfare against the invaders.

Of the European countries which suffered insignificant losses, mention should be made of Denmark, which lost 398 men[4] in the German Army, and neutral Switzerland, 60 citizens of which perished in the French Resistance Movement.[5]

No picture of World War II would be complete without considering the losses suffered by *China* and *Japan*.

Japan, it will be recalled, was at war with China long before the outbreak of the war in Europe. Although losses of this period of the Japanese-Chinese war cannot be included among World War II losses, it is of interest to cite data on the number of killed and wounded Chinese soldiers and officers, reported by the Office of Military Operations of the Kuomintang National War Council in October 1944.

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[1] G. Frumkin, op. cit., p. 89.
[2] E. Kulischer, op. cit., p. 280.
[3] G. Frumkin, op. cit., p. 112.
[4] G. Frumkin, op. cit., p. 55.
[5] A. Sottile, op. cit., p. 10.

Casualties of China in the War Against Japan *

Years	Number of killed and wounded
1937 (6 months)	366,382
1938	735,417
1939	341,543
1940	673,386
1941	282,169
1942	246,390
1943	87,113
1944 (6 months)	69,820
Total . . .	2,802,220

* *World Almanac*, 1945, p. 39.

In addition to the above data, there are figures on Chinese casualties as of June 7, 1945, according to which 1,310,224 Chinese were killed and 1,752,591 were wounded, or a total of 3,062,815 soldiers and officers, not counting the 115,248 missing. After the end of the war against Japan General Ho Ying-chin, Deputy Commander-in-Chief of the Kuomintang Army, stated on September 28, 1945, that "in China's eight years of resistance, more than 1,800,000 troops and officers were killed and 1,700,000 others wounded and missing".[1] Although the proportion of wounded and killed in this report arouses doubt (the number of killed is bigger than the number of wounded) and it is also unclear how the number of wounded and missing could decline by almost 200,000 after four months of war, nevertheless this figure is probably the most complete as regards the number of killed, and covers the entire period of the war against Japan.

As early as July 30, 1944, the American radio estimated Japan's losses in World War II at one million killed. Subsequent American appraisals raised the number of killed to 1.2 million and even 1.5 million. Official figures for Japanese losses are much lower than those given by the Americans. Early in September 1945, a spokesman of the Japanese Government stated at the 88th Session of the Japanese Parliament that total casualties for the Japanese Army and Navy amounted to 5,086,000 men.

[1] *World Almanac*, 1946, p. 44.

The distribution of these casualties by categories is quite peculiar.

Casualties of the Japanese Armed Forces According to Official Data*
(thousands)

Army		Navy	
Killed	310	Killed	157.4
Wounded	146	Died from disease	1.5
Sick	4,470	Missing	1.4
Total	4,926	Total	160.3

* A. Vagts, op. cit., p. 418.

First of all, it is surprising that the categories of casualties in the Army and Navy differ. Were there no wounded in the Navy and were there no missing in the Army? Moreover, the proportion between the types of casualties arouses serious doubt in the authenticity of all the figures. For some reason the wounded account for only half the number of killed, while the sick make up nine-tenths of all army casualties. The number of killed in the army, as stated in the official data, is greatly underestimated.

Subsequently, the Japanese War Ministry published entirely different data on army casualties: it repeated the obviously wrong figure of killed, 310,000, increased the figure of wounded ten times (1,460,000) and diminished the figure of sick to 470,000, or one-tenth of that cited earlier. These differences offer grounds for considering that these data, too, do not reflect the real situation.

Materials of the Economic Stabilisation Council are more reliable.[1]

	Number of killed (thousands)
Army	1,140
Navy	415
Total	1,555

The Americans also kept an account of Japanese losses. According to the report made by General Marshall on October 10, 1945, Japanese losses were as follows:

[1] *Istoriya voiny na Tikhom okeane* (History of the War in the Pacific), Vol. IV, Moscow, 1958, p. 308.

Japanese Losses According to American Data *

(thousands)

Theatres	Killed and dead of wounds	Permanently disabled	Taken prisoner	Total
South Pacific	684	69	20	773
Central Pacific	273	6	17	296
India-Burma	128	38	3	169
China	126	126	1	253
Aleutian Islands	8	1	0	9
Total	1,219	240	41	1,500

* A. Vagts, op. cit., p. 419.

These data evidently cover only Japanese losses in operations against the Anglo-American forces. Hence account must be taken of the losses inflicted on Japan by the Soviet Army and the Chinese troops.

The Japanese lost 80,000 killed in battles against the Soviet Army which struck a crushing blow at the Japanese forces stationed in Manchuria.

Moreover, as can be seen from the following data, the Japanese suffered heavy losses in the war against China.

Years	Killed Japanese soldiers and officers * (thousands)
1937	85
1938	148
1939	136
1940	114
1941	105
1942	53
Total	641

* Hsu Yung-ying, «China's War Potential», *Amerasia*, Vol. 7, No. 7, 1943, p. 229.

If we add subsequent Japanese losses in the war against China, the total number of perished Japanese soldiers and

officers will be close to two million. This figure is confirmed by the post-war population censuses. The 1955 population census furnishes the following data [1]:

Population of Japan According to the 1955 Census
(thousands)

Age-groups	Males	Females	Excess of Females
25—29	3,765	3,829	64
30—34	2,799	3,335	536
35—39	2,338	2,812	474
40—44	2,326	2,621	295
45—49	2,126	2,215	89
Total . . .	13,354	14,812	1,458

The total excess of females in these age-groups was almost 1.5 million. Prior to the war, the situation was reversed in these age-groups, i.e., there were more men than women. Moreover, a considerable number of women perished as a result of the war which tended to reduce the excess of females. Hence the total number of Japanese soldiers and officers in the Army and Navy who perished from 1937 to 1945 was close to two million.

After the end of the World War II hostilities did not stop in the world. L. I. Brezhnev pointed out in his report to the 24th C.P.S.U. Congress that the forces of aggression and imperialism unleashed in post-war years "more than 30 wars and armed conflicts of varying scale". Among them were the civil war in Greece in which tens of thousands of people were killed, the war for the liberation of Algeria in which more than one million Algerians perished in battle, the war in Nigeria which claimed a toll of two million lives and the drawn-out war in the Middle East. Particularly sanguinary is the "dirty" war in Indo-China, whose losses are measured in huge figures. Of American soldiers and officers alone, according to official data, 44,000 had been killed and 295,000 wounded by the beginning of 1971. The losses of the Vietnamese both among civilians and servicemen are infinitely larger.

Only the abolition of imperialism will save mankind from the horrors of war.

[1] *Demographic Yearbook*, 1957, p. 142.

Battle Losses in European Wars Over the Last Three and a Half Centuries

Estimates of the number of killed in European wars by centuries and periods, beginning with the year 1600, enables us to calculate the number of killed during the entire period under review.

Number of Killed in Wars of European Countries Over the Past $3^1/_2$ Centuries in Various Periods

Periods	Years	Total number of killed during the entire period (thousands)	Duration of period (years)	Average annual number of killed * (thousands)
17th century	1600-99	950	100	9.5
18th century, including revolutionary wars . .	1700-1800	1,563	101	15
Napoleonic wars	1801-15	678	15	45
From 1815 to World War I	1815-1914	630	99	6
World War I	1914-18	5,801 **	4.25	1,365
Interval between two world wars	1919-39	668	21	32

* The average annual number of killed is given only to illustrate the intensity of human losses in each period, and are not suitable for comparisons. For the Napoleonic wars and World War I the averages are only for the war years, while for all other periods they also include the peace-time years.
** Excluding non-European countries.

If we include World War II, the total number of killed in wars over the last three and a half centuries will greatly exceed 20 million.

A comparison of the number of killed in wars of different epochs clearly shows that it is imperialism that brought the greatest calamities to mankind. The average annual number of killed in wars of the epoch of imperialism is tens of times greater than the average number of killed in 17th and 18th century wars

Number of Killed in the Main Wars from the 17th to the 20th Century

Wars	Years	Number of killed (thousands)	Duration (years)	Number of killed per year of war (thousands)
Thirty Years' War . . .	1618-48	180 *	30	6
War of the Spanish Succession	1701-13	230	13	18
Seven Years' War . . .	1756-63	140	7	20
Revolutionary Wars . .	1792-1801	380 **	10	38
Napoleonic Wars . . .	1805-15	560	11	51
World War I	1914-18	5,801 ***	4.25	1,365

* Including losses in the war of France against Spain in the period of the Thirty Years' War; if these losses are excluded, the number of killed in the Thirty Years' War proper will be roughly 130,000.
** Including the rebellion in the Vendée.
*** Excluding non-European countries.

In the 20th century, millions of men died on the fields of battle of imperialist-bred wars. During the preceding 19 centuries less men perished on European battlefields than in the two world wars of our century.

In the age of imperialism the destructive nature of war has assumed a scale beyond comparison with any other war in the history of Europe. It may be objected that the population of Europe, too, has grown considerably since then and, for this reason, it is insufficient to quote only absolute figures for the number of killed. However, this too is invalid. A comparison of the number of killed with the dynamics of population shows that the growth in the average annual number of killed in the 20th century is eight times greater than the increase in population.

Such is the terrible price the people have had to pay for the imperialists' fight for world supremacy. The overriding task of all progressive and peace-loving mankind today is to prevent the unleashing of new wars.

PART III. NON-BATTLE LOSSES

Chapter I. DEATHS CAUSED BY DISEASE

§ 1. Wars Prior to World War I

In past centuries considerably more soldiers and officers perished from diseases than from enemy weapons during a war. The concentration of people on small areas and the absence of the most elementary means of combating epidemics resulted in the death of huge number of soldiers from infectious diseases. Even in the 19th century, when epidemiology made big strides forward, many soldiers were the victims of epidemics. Belligerent armies were decimated by typhus during the Napoleonic wars, bubonic plague in the Russo-Turkish War of 1828-29, cholera and typhus in the Crimean War and smallpox in the Franco-Prussian War of 1870-71. Dr. L. A. Tarasevich rightly remarked that even "during 19th-century wars the number of killed by microbes greatly exceeded the number of killed by weapons".[1]

According to our calculations, the number who died from disease in armies in 17th-century wars was twice as large as the number of killed and dead from wounds and totalled 2.2 million soldiers and officers. Losses from disease were no smaller in the 18th century and took a particularly heavy toll in the Napoleonic wars, when the number of dead from epidemics reached the startling figure of 2,350,000.

In 19th and early 20th century wars it is already possible to calculate precisely the proportion between battle and non-battle losses (see *Fig. 12*).

[1] *Obshchestvenny vrach* (Public Physician) No. 2, 1915, p. 1.

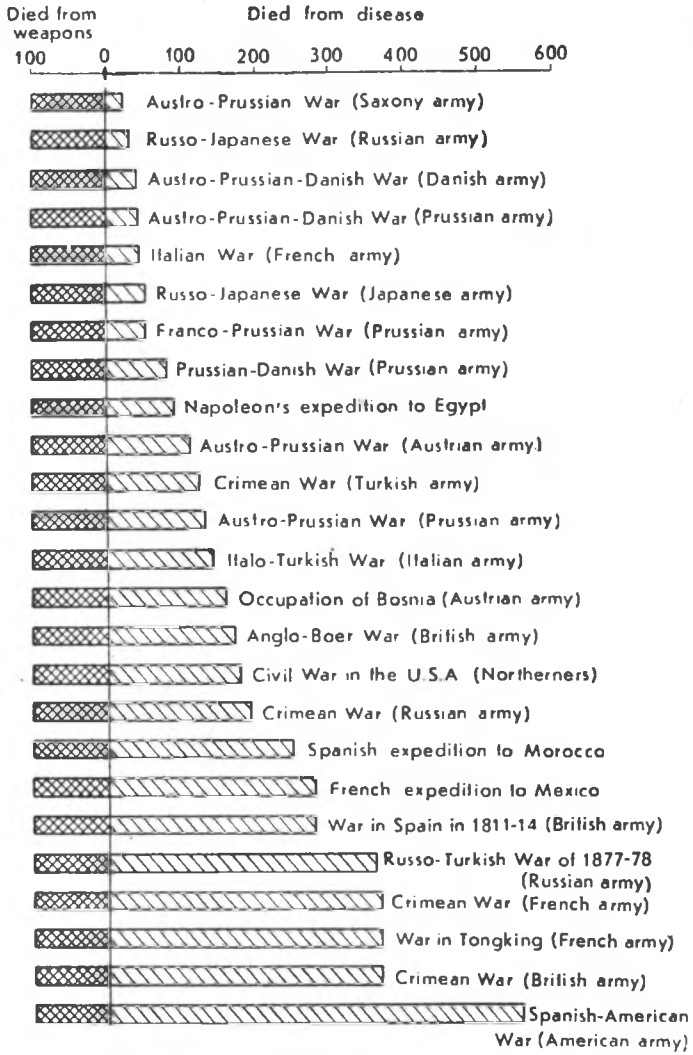

Fig. 12. Number of Dead from Disease per 100 Perished from Enemy Arms

In some of these wars, as seen from the above diagram, the number of dead from diseases was 5 or 6 times greater than the number of killed and dead from wounds (Spanish-American War of 1898). The situation changed only in World War I when prophylactic measures and medical aid made it possible to combat epidemics among the troops.

§ 2. World War I

As a result of medical progress, deaths from disease in the 1914-18 war no longer accounted for such a large share of war losses. Mass inoculations against typhus, cholera and tetanus, the isolation of sick with infectious diseases, the organisation of a large number of medical establishments and the introduction of various sanitary and prophylactic measures — all this resulted in a relatively small share of deaths from disease in total losses. The development of transport also played a big part in sharply reducing epidemics among soldiers. The use of motor vehicles made it possible to evacuate the wounded to the interior and swiftly to eliminate the concentration of large masses of wounded, among whom epidemics usually broke out.

The following information is available on mortality from disease in the *Russian Army*, during the 1914-18 war. Early in January 1917, the G.H.Q. received a report from the Chief Military Medical Inspector on morbidity among soldiers from the beginning of the war up to October 1, 1916.

Sick Sent to Medical Establishments *

(thousands)

From beginning of the war up to January 1, 1915	316.9
1915	1,078.5
1916 (first nine months)	1,255.4
Total	2,650.8

* *Trudy komissii. . .*, p. 163.

Of the total number of sick 1,173,000 were in field medical establishments and 1,478,000 were evacuated to

medical establishments in military areas. The report contained the following data on the outcome of the diseases.

Outcome of Diseases

(thousands)

Recuperated	2,110.6
Discharged or given a long leave of absence	440.0
Outcome unknown	35.3
Died	64.9
Total	2,650.8

Thus, 2.45 per cent of all the sick died.

These figures cover only the first 26.5 months of the war. Yet it was in 1917 that morbidity in the Russian Army substantially increased, as shown by the following figures from the Central Evacuation Committee.

Average Monthly Number of Evacuated Sick *

Year	Thousands	Year	Thousands
1914	16.6	1916	52.5
1915	35.2	1917 (up to September 1)	146.0

* *Rossiya v mirovoi voine...*, p. 25.

The steep increase in sickness in the last period of the war is reflected in data of military medical organisations for the period up to October 1, 1917. According to Avramov, the number of sick soldiers reached the figure of 4,981,000 as of October 1, 1917.[1] That Avramov's figures and the figures of the Chief Military Medical Inspector as of October 1, 1916, are fully comparable and cover the same categories of soldiers, is indicated by the following comparisons.

Number of Sick Soldiers

(thousands)

Date	Source	
October 1, 1916*	Chief Military Medical Inspector	2,651
January 1, 1917	Avramov's data	2,947
October 1, 1917	" "	4,981

* Including the Caucasian front, according to data as of June 1, 1916.

[1] V. Avramov, op. cit., p. 40.

Since both the Chief Military Medical Inspector's and Avramov's information cover the same range, we consider it possible to extend the percentage of dead established as of October 1, 1916, to data as of October 1, 1917. This computation raises the number of dead from disease to 122,000. We should not be troubled by the possible double count, for many soldiers were sick more than once. Had there been a file making it possible to exclude cases of repeated sickness, the number of sick would be considerably reduced and the share of dead would rise to 3-4 per cent. But since we established a continuity between material for 1916 and for 1917, no adjustment for double count need be made since this double count also figured in the 1916 material.

The figure of 122,000 has to be further raised. First, a considerable part of the sick died between October 1917 and March 1918. Throughout 1917 about 200,000 sick were admitted to hospitals every month. From October 1917 to March 1918, the influx of sick should have decreased because the strength of the army was greatly reduced in this period. Still, it may be assumed that the number of sick was not less than 500,000. Proceeding from a lethality rate of 2.6 per cent, the number of dead from disease can be set at 12,000. It is also necessary to add on the number of dead from disease at the Caucasian front. There were 13 divisions at that front on October 1, 1917, i.e., 6.5 per cent of all the forces, but since morbidity was considerably higher in Western Asia than on other fronts, we should take a percentage of deaths from disease at least twice as high. This will send up our figure for the number of dead from disease to about 17,000. Moreover, another 2,000 soldiers died suddenly and as many officers died of disease. [1]

After all these additions, the total number of dead from disease will be 155,000. This figure is partly confirmed by the number of dead from acute infectious diseases. According to Avramov's data, morbidity of, and mortality from, the main infectious diseases was as follows:

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[1] *Rossiya v mirovoi voine...*, p. 35.

Morbidity and Mortality in the Russian Army from 1914 to 1917 *

Disease	Number of sick (thousands)	Percentage of mortality **	Number of dead determined on the basis of the percentage of mortality *** (thousands)
Enteric fever	97.5	21.9	21.4
Typhus	21.1	23.8	5.0
Relapsing fever	75.4	2.4	1.8
Dysentery	64.9	6.7	4.3
Cholera	30.8	33.1	10.2
Smallpox	2.7	?	?
Scurvy	362.8 ****	0.2	0.7
Total	655.2	—	—
Total (without smallpox)	652.5	6.7 *****	43.4

* V. Avramov, op. cit., p. 40.
** August 1914-December 1916.
*** Calculated by V. Binshtok. See *Trudy komissii...*, p. 144.
**** Another 138,200 cases of scurvy were registered outside of hospitals.
***** Our calculation.

Thus, about one-third of all dead perished of acute infectious diseases. Dr. Binshtok stated that such a ratio "was quite usual"[1] and confirmed the correctness of the estimated number of dead from disease. Binshtok himself names a somewhat smaller figure, assuming that the number of dead was 130,000. He arrived at this figure by calculations based on the percentage of mortality among the sick in the Russo-Japanese War. However, this should give only a slight divergence from our calculations since the Chief Military Medical Inspector's report of October 1, 1916, gives an almost identical percentage (2.45 and 2.5 in the Russo-Japanese War). The divergence between our figures and Binshtok's can be explained, first, by the fact that he made no additions for the period after October 1, 1917, and, secondly, that losses on the Caucasian front, which he, in our opinion, considerably underestimated, were calculated in toto without sub-division into their different categories.

[1] *Trudy komissii...*, p. 145.

And so, according to our calculations, 395,000 men died in the Russian Army of wounds and disease during the course of the First World War. *Sazonov*, author of an article on Russia's casualties, estimated the number of dead from wounds and disease in the Russian army at 200,000.[1] Sazonov based this figure on the reports of the Chief Military Medical Inspector for 1916, forgetting that these figures had to be adjusted. Other authors greatly exaggerated the number of dead from wounds and diseases. *Volkov* names a figure of 1,126,000 which is based on the difference between the number of sick and wounded who did not return to the front and the "number of wounded and completely disabled", as given by Pavlovich. The simultaneous use of two entirely different sources could not possibly give Volkov the correct figure.

Huber estimates that 175,000 soldiers and officers died of disease in the *French Army*[2] and 4,000 in the Navy (chiefly, from Spanish flu), making a total of 179,000 dead from diseases.

In the *British Army* the number of dead from disease and other causes is expressed by the following figures:

Soldiers and Officers Dead From Diseases and Other Causes*

Theatre	Thousands
France	59.4
Italy	0.8
Dardanelles	4.0
Salonika	5.4
Mesopotamia	23.6
Egypt	8.3
East Africa and other areas	6.8
Total	108.3

* *Statistics of the Military Effort of the British Empire...*, p. 243.

The large number of deaths from diseases in Mesopotamia is explained by epidemics in the forces operating

[1] *Trudy komissii...*, p. 165.
[2] M. Huber, op. cit., pp. 415, 428

in Western Asia. Twelve thousand men died of disease and accidents in the British Navy. Thus, a total of 120,000 men from the British Empire died of disease in World War I.

Of this total it is necessary to single out those who died from accidents. Unfortunately, there is no direct information on this score. All we know is that in the Australian Army the percentage of deaths from accidents was 16, in the Canadian 13,[1] American 8 and the British Army 9.[2] On these grounds it may be held that about 12 per cent, or 14,000, perished from accidents, with about 10,000 of them in the United Kingdom. Consequently, the number of dead from disease in the British Empire was 106,000; of which 23,000 were from the Indian Army, 16,000 from the Dominions' armies and 67,000 from the United Kingdom.

Mortara estimates that in *Italy* 53,000 men died of disease in hospital. In addition, 32,000 soldiers and officers who were in the reserve army died of disease, making a total of 85,000. Considering that 6,000 perished from accidents it may be estimated that a total of 79,000 men died of disease in the Italian Army during World War I.

In the *American expeditionary forces* 21,300 soldiers and officers died from disease.[3] In addition, a considerable number died from disease in America. Altogether 54,800 soldiers and officers in the U.S. Army died from disease.[4] In the Navy more than 7,000 perished, of whom about 6,000 died from disease.

In the *Rumanian Army* the number of dead from disease was high as compared with the army's overall strength. According to the French magazine *Drapeau bleu*, 30,000 Rumanian soldiers and officers died from disease.

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[1] Calculated on the basis of data in the *Bulletin mensuel de statistique* No. 5, 1946, p. 190; No. 6, 1946, p. 191.

[2] Information taken from M. J. Mitchell and G. M. Smith, op. cit., p. 95.

[3] L. P. Ayres, *The War with Germany. A Statistical Summary*, Washington, 1919, p. 123.

[4] *Medical Department of the United States Army in the World War*, Vol. XV, Part II, Washington, 1925, p. 579.

In the *Serbian* and *Montenegrin Army* 50,000 men died of disease, according to the same source.

In the *Belgian Army* losses from disease, according to Prentiss, were 2,300 men and in the *Portuguese Army*—1,000 men. [1]

In the *Greek Army* 16,994 men died, including those who died of wounds. [2] The number of the latter did not exceed approximately one-fourth of the number of killed. Consequently, about 15,000 Greek soldiers and officers died of disease.

In the *German Army*, according to a medical report made public in 1934, [3] 123,300 men died from disease, including 5,744 of sudden death (from August 2, 1914 to July 31, 1918). This figure differs substantially from the figures published 11 years earlier in *Wirtschaft und Statistik*, when it was reported that 188,000 men died of disease and other causes in the German Army. [4] Even if we assume that this figure includes all accidents and suicides, the divergence will nevertheless be considerable. In this case preference should be given to the bigger figure as being the more complete. From the figure of 188,000 we should exclude accidents (13,470 men, according to the report), suicides (5,106), murders (294, according to *Wirtschaft und Statistik*) and also dead from gas poisoning (about 3,000). This will leave us with a total of 166,000 who died from various diseases. First place among the causes of death is held by pneumonia (27,000), then tuberculosis of the lungs (20,000), influenza (14,000) and typhus (11,000).

In the *Austro-Hungarian Army* 300,000 men died of disease and wounds. The number of dead from wounds has been earlier estimated at 170,000 (see p. 78), and 10,000 (i.e., one per cent of all losses) died from other causes. Consequently, the number of dead from disease was 120,000. Tuberculosis took the biggest toll (43,000 in

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[1] A. M. Prentiss, *Chemicals in War. A Treatise on Chemical Warfare*, New York, 1937, p. 652; *Drapeau bleu* states that 25,000 men perished from disease, but this figure seems incredible.

[2] Bujac, op. cit., p. 338.

[3] *Sanitätsbericht usw.*, Bd. III, S. 25.

[4] "Die deutschen Verluste im Weltkrieg nach Todenursachen", *Wirtschaft und Statistik* No. 18, 1923, S. 582.

three years of war), next came enteric fever (24,000), cholera (16,000), dysentery (11,000) and malaria (3,000).[1]

There are few reliable figures to be found on disease in the *Turkish Army*. Prentiss states that altogether some 55,000 men died of disease; a French source names 60,000 and a British source quotes a figure four times bigger—240,000! However, even this last figure is underestimated. Hospital organisation was unsatisfactory with 2,555 doctors trying to cope with an army of three million. The soldier was badly clothed and the food was terrible. As a result, epidemics raged, causing wholesale death among the soldiers.

Emin gives figures for Turkish Army losses from disease in World War I, referring to the unpublished *Medical History of the War*, prepared by the Medical Department of the Turkish War Ministry. According to this source, morbidity and mortality in the Turkish Army during the First World War was as follows[2]:

Years of war	Number of sick	Number of dead from disease
First	409,560	57,462
Second	853,079	126,216
Third	947,075	133,469
Fourth	844,878	84,712
Total . . .	3,054,592	401,859
In addition, those not with the army in the field	460,979	64,900
Grand total	3,515,571	466,759

The table shows that Turkish Army losses in World War I were tremendous. The number of sick was bigger

[1] S. Kirchenberger, "Zur Sanitätsstatistik der Österreichische-ungarischen Armee im Kriege 1914-1918", *Volksgesundheit im Krieg*, 1926, S. 70.

[2] A. Emin, op. cit., p. 253.

than the number of mobilised (owing to repeated illness), while the number of dead from disease reached almost 500,000, a figure unheard of in 20th-century wars. More than 15 per cent of all the mobilised died from disease, as compared with only 1 or 2 per cent in the armies of other countries. In the 1914-18 war Turkey was the only country in which losses from disease exceeded battle losses, as was the case in pre-20th-century wars: 467,000 dead from disease as against 318,000 killed in battle. The Turkish Army accounted for one-third of all soldiers and officers who died from disease in the 1914-18 war.

According to the War Ministry, 24,000 men died from disease in the *Bulgarian Army.*

Number of Dead from Disease in the 1914-18 War
(thousands)

Entente		Central Powers	
Russia	155	Germany	166
France	170	Austria-Hungary	120
Great Britain	67	Turkey	467
British Dominions and Colonies	39	Bulgaria	24
Italy	79		
Belgium	2	Total	777
Rumania	30		
Serbia, Montenegro	50		
Greece	15		
French colonial armies	9		
Portugal	1		
U. S. A.	58		
Total	675		

The total number of dead from disease in the 1914-18 war was close to 1.5 million. [1]

[1] The French journal *Drapeau bleu* mentions an utterly incredible figure of dead—3,115,000. The journal arrived at it because it gave a figure of 1.3 million deaths from disease for Russia (eight times greater than our estimate); 400,000 for Germany (2.5 times greater); 500,000 for France, etc.

It should be noted that deaths from epidemics were not great. For example, 11,000 men died of typhus in the German Army, 18,000 in the French, 24,000 in the Austrian and about 30,000 in the Russian Army. Cholera took a toll of 2,000 in the German Army, 10,000 in the Russian Army and about 16,000 in the Austrian Army. Epidemic diseases were much more widespread in the Turkish Army. But on the whole in all countries the number of dead from epidemics was only a few per cent of the total killed.

§ 3. The Interval Between the Two World Wars

Epidemic diseases became widespread during the Civil War in Russia.

The flu epidemic carried into Russia from abroad claimed a huge toll, as, indeed, in all other European countries. In addition, a typhus epidemic raged in Russia causing big losses in the Red Army and among the civilian population, already exhausted by the privations of the 1914-18 war and the blockade organised by the Entente.

In 1918-20, 573,882 cases of typhus and 780,870 cases of relapsing fever were registered in the Red Army. [1]

In the first eleven months of 1921, 316,000 men in the Red Army were down with typhus, of whom 18,000 died. Thus, the mortality rate was 6 per cent. Taking this mortality rate for 1918-20, we estimate that 100,000 Red Army men and commanders died of typhus.

Morbidity in the Red Army during the Civil War was as follows [2]:

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[1] A. Sysin, "Epidemics of Typhus and Relapsing Fever in Russia from 1918 to 1920", *Trudy IV syezda bakteriologov* (Proceedings of the Fourth Congress of Bacteriologists), pp. 25, 33, 36.

[2] Central State Archives of the Red Army, file 34, register 2, folder 12, sheet 10; file 6, register 4, folder 739, sheet 383. Special Memorandum written by the Chief of the Fifth Medical Statistics Office of the Central Medical Department.

Period	Number of sick (thousands)		
	Fronts	Interior	Total
October 1918-January 1, 1919	40.6	47.2	87.8
1919	818.2	253.5	1,071.7
January 1, 1920-November 1, 1920	2,201.6	319.3 *	2,520.9
Total . . .	3,060.4	620.0	3,680.4

* Up to August 1.

In the first 10 months of 1920, the number of sick exceeded 2.5 million. On this basis it may be held that there were about 3 million sick during the entire year. It is known that in 1920, 174,000 servicemen died from disease at the front and in the rear, i.e., mortality was also 6 per cent.[1] Applying this percentage to the five million men in the Red Army who were sick during the Civil War, we may assume that some 300,000 servicemen died of disease, including those in the rear.

In the counter-revolutionary armies epidemic diseases were also widespread. Military medical service was poorly organised, and this led to considerable losses from disease.

The whiteguards were in a particularly grave position at the beginning of 1920 in the Don and Kuban areas. Eyewitness accounts give the following picture of the medical situation in the White Army: "Hospitals were incredibly overcrowded. Owing to a shortage of beds, evacuation and hospital trains were not unloaded for months. The wounded and the sick, lacking the most elementary care, died in thousands. In view of the chaos in the army medical department, mortality in hospitals reached incredible proportions. As a result, the wounded and sick resorted to any measures in order not to be evacuated and avoid hospital treatment." The head of the local garrison at Mechetinskaya described the situation in the following

[1] N. Zelenev, "Military Medical Service", *Bolshaya meditsinskaya entsiklopedia*, Vol. 5, p. 450.

words: "I have more than 6,000 people sick with typhus .... The situation in the local hospitals is terrible. A place expected to accommodate a maximum of 100-200 patients now has from 1,000 to 2,000. There are no medical personnel and the sick are placed haphazardly, side by side. Every night 20 to 30 people die in each hospital. Since there are no orderlies, they remain there for a few days and the sick walking out into the yard have to step over the corpses. There is no place to which we can evacuate the sick. The situation is the same wherever you turn. All the villages are overcrowded, and so are the towns; moreover, there are no bandaging materials...!" Similar stories were related by all who were at the front. [1]

Available information shows that the losses of the whiteguards from epidemics in Southern Russia were tremendous, but the actual scale remains unknown. More information is available on the two other Civil War fronts — the Western and the Eastern. It is known that 30,337 soldiers and officers [2] died from wounds and disease in the Polish Army from 1918 to 1920. Since there were 113,500 wounded and assuming a six per cent mortality rate from wounds we estimate that 24,000 people died from disease. [3] The number of Poles killed was 38,000. Thus, losses from diseases amounted to almost two-thirds of all battle losses.

During the Civil War, epidemics in the White Army were even more widespread on the Eastern front. This is borne out by Professor V. A. Bashenin, who was at that time head of the Red Army Medical Department in Novo-Nikolayevsk (now Novosibirsk). At the end of 1919 and the beginning of 1920, large numbers of former soldiers from Kolchak's Army were there: part of them went over to the Red Army, the others were taken prisoner. A violent epidemic of typhus and relapsing fever, which claimed a high rate of mortality, broke out among them. Professor

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[1] G. Rakovsky, *V stane belykh* (In the Whiteguard Camp), Constantinople, 1920, pp. 86, 87.

[2] M. Handelsman, op. cit., p. 340.

[3] The number of sick officers and soldiers in the Polish Army from 1918 to 1920 was 403,456 (M. Handelsman, op. cit., p. 340). Consequently, the number of dead estimated by us means a lethality of 6 per cent.

Bashenin cites the following figures of dead soldiers from Kolchak's Army [1]:

Period	Died in barracks	Died in hospitals
December 1919 and January 1920 . .	6,313	2,197
February 1920	3,804	1,708
March 1920	82	1,105
Total . . .	10,199	5,010

A total of 15,209 men died from this epidemic. Professor Bashenin is inclined to consider that this figure underestimated the real situation because, as he points out, "in the spring many corpses were found in cellars, ditches, abandoned buildings and other out-of-the-way places". Another big typhus epidemic in the White Army raged through the town of Krasnoyarsk where up to 700 sick were admitted daily to military hospitals.[2] Taking into account other centres of typhus epidemics, Professor Bashenin estimates that about 50,000 men died of typhus in Kolchak's Army.

Since typhus was the main, but not the only, cause of death from disease among the soldiers of Kolchak's Army, it may be held that total losses of the Whites from diseases in the East were somewhat higher than this figure. Together with whiteguard losses in the West (24,000) and in the South (which also ran into tens of thousands), it may be considered that approximately 150,000 men died from disease in the White armies.

Epidemics in the White armies were the source of epidemic diseases in the Red Army too. White troops deserting to the Reds, carried over infection, often without suspecting it themselves. "When our forces crossed the

[1] V. Bashenin, "Epidemiological Observations in the Civil War", *Gigiyena i epidemiologia* No. 10, 1928, pp. 37, 38.

[2] K. Grechishchev, "Typhus and Relapsing Fever in Siberia", *IV Vserossiisky syezd bakteriologov i epidemiologov* (Fourth All-Russia Congress of Bacteriologists and Epidemiologists), August 25-31, 1920, p. 46.

Urals and entered Turkestan," wrote N. A. Semashko, "a huge avalanche of epidemic diseases (typhus, enteric fever and relapsing fever) descended on our army from the Kolchak and Dutov forces. Suffice it to say that of the 60,000 Whites who came over to our side in the first few days after Kolchak and Dutov were defeated, 80 per cent were infected with typhus. Typhus on the Eastern front and relapsing fever mainly on the South-Eastern front, swamped our troops. Even enteric fever, the result of the absence of elementary sanitary measures, at least inoculations, raged through Dutov's Army and was carried over to our troops." [1]

Though the share of losses from disease in the White Army was much higher than in the Red Army, the actual number of dead from disease was lower. This is explained by the fact that the Red Army was numerically larger than the White Army.

The total number of soldiers and officers who died from disease during the Civil War may be estimated at approximately 450,000 for all belligerents.

During the *Graeco-Turkish War*, approximately 5,000 Greek soldiers and officers died from disease. If we take a similar number of dead for Turkey, total losses from disease in that war amounted to 10,000 men.

There were no large-scale epidemics during the *national-revolutionary war in Spain* from 1936 to 1939, and the number who died from disease was small. Enteric fever, malaria, and scabies were the most widespread infectious diseases with only isolated cases of typhus in the Republican Army. In September 1938, mortality from enteric fever reached 14 per cent. During the fighting on the Ebro from July 25 to November 16, 1938, there were 23,072 sick. [2] On the basis of some fragmentary data, it may be assumed that the number of deaths from disease was less than one-tenth of the number of killed and dead from wounds.

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[1] N. Semashko, "Politics and Medicine", *Izvestiya Narodnogo komissariata zdravookhraneniya* (Annals of the People's Commissariat of Public Health) No. 1-2, 1920, p. 11.

[2] A. Veliki, op. cit., Vol. I, pp. 169, 279.

§ 4. World War II

Although at the beginning of World War II the organisation of medical services was at a relatively high level, the German Army had a tremendous number of sick. Sick soldiers filled two-thirds of the German Army hospitals as can be judged from the following data [1]:

Out of each 100 soldiers in hospital there were

Wounded	27	Frost-bitten	3
Sick	64	Victims of accidents, etc.	6

Although a large number of the sick recuperated, many soldiers were permanently disabled as a result of sickness. According to West German statisticians, there were 1,100,000 such invalids, almost 300,000 more than those disabled by wounds.

Altogether 125,000 men died in the German Army from disease as compared with 166,000 in World War I.

In the Japanese Army morbidity was also high: the number of sick (4.5 million) was somewhat smaller than the total strength of the entire army (5.5 million).

Military medical services were better organised in the anti-Hitler armies.

In the Soviet Army the level of medical care was exceptionally high. Sanitary epidemic surveys, regular 100-per cent inoculation of all men, polyvalent serums, medical service available to the entire personnel and propaganda of sanitary measures—all were highly effective. Mobile field hospitals for treating infectious diseases brought medical aid close to the field of battle. Hospitals had all the necessary equipment for treatment and diagnosis (X-ray facilities, laboratories, etc.) and were supplied with sulfa drugs, streptocides, blood transfusion units and, in the last period of the war, penicillin. Due to these measures the lives of many thousands of Soviet servicemen were saved and the overwhelming majority of sick soldiers and officers recuperated. "In the war waged by our people, a war unparalleled in the history of mankind, the Soviet Army was free from epidemics.

[1] B. Mikat, "Die Kriegsbeschädigten im Bundesgebiet", *Wirtschaft und Statistik*, H. 2, 1951, S. 50.

There were only scattered cases of epidemic diseases which comprised an insignificant percentage of the total morbidity among soldiers and officers in the field."[1]

As a result of the well organised medical aid and efficient system of evacuation of the wounded, mortality from wounds was substantially cut and 73 per cent of all wounded returned to active service.[2]

Here are some data for the other belligerents.

Summary data on the number of deaths from disease in the land armies of four countries during World War II show a relatively low level of losses in this category.[3]

Country	Number of soldiers and officers who died from disease	Number of soldiers and officers killed and dead from wounds	Number of dead from disease per 100 killed and dead from wounds
United States . . .	15,779	234,874	7
Canada	1,595	17,661	9
Australia	2,953	17,020	17
New Zealand . . .	210	6,089	3

Though several million men were mobilised into the U.S. Army, the number of dead from disease was small. And, whereas in World War I the number of American soldiers and officers who died from diseases was greater than the number of killed and dead from wounds (if we take the army as a whole rather than just the expeditionary force), in World War II it was much smaller.

The higher level of losses in the Australian Army is explained by the unfavourable climatic conditions in which it had to fight. In the jungle, for example, losses from disease were 16 times greater than battle losses.[4]

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[1] Y. Smirnov, "Thirty Years of the Soviet Public Health Service", *Izvestiya*, October 17, 1947.

[2] *Istoriya Velikoi otechestvennoi voiny*, Vol. 6, p. 130.

[3] Calculated on the basis of data in *Bulletin mensuel de statistique* No. 5, 1946, p. 190; No. 6, 1946, p. 191; *Preventive Medicine in World War II*, Vol. IV, p. 8.

[4] H. Fairley, "Medicine in Jungle Warfare", *Proceedings of the Royal Society of Medicine* No. 5, 1945, p. 195.

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The material quoted in this chapter shows that the proportion of battle losses to non-battle losses radically changed in the course of the last two centuries. In wars prior to the 19th century the number of victims from epidemics was several times greater than battle losses. In 19th-century wars, battle losses began to exceed losses from disease. In World War I these losses were approximately one-eighth of the battle losses. A comparison of the number who died from disease with the number of mobilised in the 1914-18 war gives a 2 per cent death rate from disease (compared with the total number of soldiers).

The drop in losses from disease was even more substantial in World War II, when medical science was equipped with new means of combating disease.

Thanks to new discoveries in the field of medicine and hygiene, and to the general progress of military medical service, diseases are no longer such a big source of losses among servicemen. [1]

Chapter II. POW LOSSES

In ancient wars no prisoners were taken and the vanquished were usually killed. Only with the rise of slavery did the victors start to take prisoners and sell them into slavery.

The conversion of prisoners of war into slaves was one of the main causes of war in the epoch of slavery. "Successful campaigns against the peoples neighbouring on Greece and Rome brought tens of thousands of prisoners, who were turned into slaves. Since the victors could not make personal use of all their prisoners, a flourishing slave trade soon developed, and slave traders, like jackals, followed behind the Greek and Roman armies in expectation of prey." [2] After the victory of Rome over Perseus

[1] This does not mean that disease has been completely eliminated in modern armies. What has changed is the composition of the morbidity. Whereas in the past most diseases were epidemic, in 20th-century wars a large share is made up by diseases which are not acutely infectious.

[2] K. Ostrovityanov, *Ocherki ekonomiki dokapitalisticheskikh formatsii* (Essays on the Economics of Pre-Capitalist Formations), Moscow, 1945, p. 51.

and Mathridates "the price of a slave dropped to 4 drachmas, while in long periods of peace it rose to 400-500 drachmas". [1]

In ancient Russia prisoners of war were also frequently sold. For example, in 1169, after an unsuccessful attempt to capture Novgorod, Suzdal warriors who had been taken prisoner were sold in groups of ten for one silver *grivna*. But prisoners were not always sold into captivity. When there were so many that they hampered the movement of troops, or presented a possible danger during fresh clashes with the enemy, prisoners were simply killed.

The exchange and ransom of war prisoners began at a later age. For example, a colonel's ransom was set at 400 francs and a private's at $7^1/_2$ francs. [2] This sort of trading in prisoners was practised on a wide scale in the 18th century. During the Seven Years' War the following conditions of exchange or ransom were established [3]:

Terms of exchange	Ransom privates	Ransom guldens
Field Marshal	3,000	15,000
Brigadier	200	1,000
Colonel	130	650
Lt.-Col.	60	300
Captain	16	80
Ensign	5	25
Private	1	5

During the Seven Years' War the exchange of prisoners was practised even during hostilities and was discontinued only when the allies who fought against Prussia learned that this exchange was delaying Prussia's defeat. [4]

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[1] V. Skopin, *Militarism*, Moscow, 1957, p. 72, footnote 5.

[2] H. Delbrück, *Geschichte der Kriegskunst im Rahmen der politischen Geschichte*, Bd. 4, p. 271.

[3] Maslovsky, *Russkaya armiya v Semiletnei voine* (Russian Army in the Seven Years' War), Third ed., Moscow, 1891, p. 220.

[4] Exchange of prisoners was also practised in later years. During World War I, 36, 797 wounded Russian prisoners were exchanged (A. Sysin, "Refugees and Prisoners of War During the Imperialist War", *Izvestiya Narodnogo komissariata zdravookhraneniya* No. 1. 1925, p. 9).

Some of the prisoners died in captivity and should thus be considered as war losses. Living conditions in captivity were never easy and frequently led to the death of the POWs. Moreover, there were a considerable number of prisoners who died in captivity from wounds and disease.

Epidemics spread rapidly among POWs and claimed a huge toll. For example, it is known that, as a result of poor food and unhygienic conditions, an acute typhus epidemic broke out among Spaniards taken prisoner by Napoleon during the Spanish campaign and claimed the lives of thousands of prisoners.

Millions of soldiers were taken prisoner in the 1914-18 war. In view of this, ascertainment of the number who died in captivity is of paramount importance for our study.

Any estimate of the number of Russian soldiers and officers who died in captivity must take into account the terrible conditions in which Germany and Austria kept POWs. Prisoners died by the thousands from starvation, cold and disease. The writer Kirill Levin, who spent several years in Austrian captivity, recalls in his memoirs that "people gradually grew very weak and life petered out as easily as a wetted sheet of paper tears". There was a cemetery near each POW camp, to which the victims gradually "moved". Levin relates how he wandered around the cemetery for a long time inspecting the graves: "I looked at white soldiers' crosses and as I read the two- or three-digit numbers I recalled that these had once been living people of whom nothing now remained. Only official entries in the prison camp office recorded their death—figures which no one would ever read and learn how many perished." [1]

The writer, however, was not exactly right. It is possible to gain an approximate idea of the number who died in captivity in the 1914-18 war.

The total number of soldiers and officers who died in captivity from wounds, disease and starvation in the 1914-18 war can be estimated as follows (thousands):

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[1] K. Levin, *Zapiski iz plena* (Notes from Captivity), Moscow, 1936, pp. 91, 103-04.

Anti-German bloc		German bloc	
Russia	190	Germany	56
Serbia, Montenegro	60	Austria-Hungary	70
Italy	60	Turkey	16
Rumania	40	Bulgaria	1
France	19		
British Empire	16		
Belgium	1		
Total	386	Total	143

Altogether more than 500,000 men died in captivity in World War I. There is a sharp difference in the number who perished in captivity in the German and in the anti-German blocs. About 3 million German, Austro-Hungarian, Turkish and Bulgarian soldiers and officers were taken prisoner. Thus, the number of dead can be set at 4 per cent. In comparison, there were some 4.5 million soldiers and officers from countries of the anti-German bloc taken prisoner, of whom 386,000, or about 9 per cent, died in captivity. This shows that in World War I living conditions for POWs in the countries of the German bloc were incomparably worse than in countries of the anti-German coalition.

In *World War II* the number of POWs was even greater than in World War I. After Hitler's attack on Poland in 1939 about 500,000 Poles were taken prisoner. After the defeat of France in the summer of 1940, more than one million Frenchmen and tens of thousands of British fell into captivity. Beginning with the summer of 1941 Soviet servicemen, too, were taken prisoner by the Germans. We mentioned earlier what German captivity was like during World War I. But all its hardships pale in comparison with the horrors POWs endured in nazi Germany.

The German fascists ruthlessly annihilated Soviet servicemen regarding them as men of an "inferior race". Orders from the nazi army command pointed out that "there is no point in bothering with wounded Russian

POWs; they are simply to be finished off on the spot", that the "supply of food ... to POWs is unnecessary charity".[1] An Order of the Day, dated July 25, 1941, issued by headquarters of the Commander-in-Chief of the German Army, stated that "any lenience or humanity towards POWs is strictly forbidden. POWs may be fired at without warning". Order of the Day No. 166/41 of the 60th German Motorised Infantry Division stated: "Russian soldiers and junior officers are exceptionally brave in battle. Even isolated small units fight back. In view of this there must be no humane treatment of prisoners. Destruction of the enemy by fire or cold arms must be continued until he is rendered harmless.... Fanaticism and scorn of death turn the Russians into enemies whose destruction is obligatory."[2]

The nazi killers strictly abided by these orders. Soviet servicemen perished by the thousands in nazi camps from starvation, cold, disease, torture and execution. Many Soviet POWs perished in the numerous camps set up by the Germans on occupied territory. Vyazma, Roslavl and Kremenchug became mass cemeteries for Soviet soldiers.

Some West German historians are trying to distort the events of the recent past by painting a false picture of the condition of the Soviet POWs. Professor Pfeffer, for example, writes: "True, *some* POWs suffered brutality and privations, but as a rule, despite *individual* actions by undisciplined men, the treatment of war prisoners was *quite proper*."[3] Indeed, the professor oversteps all bounds of cynicism when he describes the mass annihilation of Soviet servicemen as "quite proper".

It is difficult to estimate the exact number of Soviet soldiers who perished in nazi captivity, but it is undoubtedly very high. For example, the Special State Commission for the Establishment and Investigation of German War Crimes reported that 30,000 Soviet POWs perished

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[1] P. Romashkin, *Voyenniye prestupleniya imperializma* (Imperialist War Crimes), Moscow, 1953, pp. 149, 152.

[2] *Dokumenty obvinyayut* (Documents Accuse), Issue I, Moscow, 1943, pp. 206, 208.

[3] *Bilanz des zweiten Weltkrieges*, pp. 373-74 (our italics. — *B. U.*).

in Riga's Stalag-350 camp from December 1941 to May 1942 alone. More than 19,000 people died from cold, torture and epidemics in a branch of this camp from September 1941 to April 1942. Altogether the Germans tortured to death and killed 130,000 Soviet POWs in this camp and its branches. In another camp, Stalag-340, located in Daugavpils, more than 124,000 Soviet POWs perished in three years. Altogether the fascists tortured to death and shot 327,000 Soviet POWs in concentration camps in Latvia. Similarly, the Germans killed 165,000 Soviet POWs in camps in Lithuania.

Not far from the town of Ostrow-Mazowecki in Poland, the nazis engaged in the wholesale slaughter of Soviet war prisoners: in the camp near the village of Grondy 41,592 men were killed from June to December 1941 out of a total of 80,000-100,000 of Soviet POWs brought there. In the camp at Komarovo more than 24,000 Soviet POWs were murdered in one and a half years (1942-43), and at Buchenwald the nazis massacred over 7,200 Soviet officers.

Many documents made public at the Nuremberg trials revealed the vast number of Soviet servicemen who perished in captivity. For example, in one of the documents reported at a meeting of the German Economic Chamber on February 19, 1942, it was pointed out that 500,000 Russians had died in captivity.

The fate of other Slav prisoners was also harsh. There is information that in 1941, out of 33,000 Russian and Polish POWs in one camp, 27,000 were annihilated by shooting, starvation or forced labour beyond their strength. According to the British radio, of 30,000 Yugoslav POWs who were in concentration camps in Norway, not more than 800 were alive by February 1943.

Some POWs were awarded the dubious privilege of "working in industry". But even there an early death awaited them. For example, of the 2,000 Belgian POWs who worked at a Göring war factory, only 1,200 capable of working survived after six months. The others perished from disease and exhaustion.

The mortality of Frenchmen in nazi captivity was also high. According to calculations made by the French Institute of Demographic Studies, 240,000 Frenchmen

perished in Germany during the war, including Frenchmen transported there for work. [1]

In Japan the condition of the POWs was also extremely hard. Americans and British taken prisoner were brutally tortured and killed by the Japanese fascists.

The percentage of POWs who perished in Japanese captivity is shown in the following table:

Number of American and British Soldiers and Officers who Perished in Japanese Captivity

Category of POWs	Total number	Died or killed in captivity	Percentage of perished in captivity
British, including merchant seamen	51,103	10,873	21
American	21,580	7,107 *	33
British colonial forces .	3,224	190	6
Australian	21,726	7,412	34
Canadian	1,691	273	16
Total . . .	99,324	25,855	26

* According to more complete data, 9,901 American POWs died in Japanese captivity. (G. W. Beebe and M. E. de Bakey, *Battle Casualties: Incidence, Mortality and Logistic Considerations*, 1952, p. 20.)

Thus, more than one-fourth of the POWs perished in Japanese captivity.

German and other POWs in the U.S.S.R. were in a different position. It was stated in a note of the Foreign Ministry of the U.S.S.R. on April 27, 1942, that the Soviet Government, loyal to its humanitarian principles and its international obligations, would abide by the Hague Convention of 1907 on the treatment of prisoners of war. [2] Observance of this convention ensured the re-

[1] P. Vincent, "Conséquences de six années de guerre sur la population française", *Population* No. 3, 1946, p. 434. The same figure had been given earlier in a column "Dead Frenchmen among those detained by the enemy outside France" by J. Bourgeois in an article "La situation demographique" in *Population* No. 1, 1946, p. 118.

[2] Article 4 of the Convention reads: "Prisoners of war are in the power of the hostile Government, but not in that of the individuals or corps who captured them. They must be humanely treated." (Higgins, A. Pearce, *The Hague Peace Conferences*, Cambridge, 1909, p. 219.)

patriation of hundreds of thousands of soldiers and officers of the belligerents after the war ended. POW camps had "experienced medical personnel and a sufficient number of well-equipped polyclinics, medical and sanitary institutions. Special attention was paid to improving the prisoners' physical condition, to treatment of the sick, sanitary inspection and medical control over food and labour, prevention of epidemic diseases, avitaminosis and traumatism . . . ." [1]

It is impossible to ascertain the exact number of POWs who died during World War II. But it is beyond doubt that a huge number of them perished in nazi captivity. [2]

Chapter III. LOSSES FROM ACCIDENTS AND OTHER CAUSES

Disease and captivity are the main causes of the death of soldiers and officers outside the field of battle. However, there are also secondary non-battle losses: accidents, murders, suicide and death-sentences imposed by courts-martial. At times this group also includes cases of sudden death which, strictly speaking, should be listed among deaths from disease.

The number who died from these causes in early wars is unknown and it is only at the end of the 18th century that we find the first statistical data on this category of direct war losses. For example, *Desgenettes* reported that during the Egyptian campaign of 1798-99, Bonaparte's army of 30,000 soldiers lost 290 men from accidents and 3,614 killed in battle; the total number of killed and dead was 8,915. [3] Thus, three per cent of all the dead perished from accidents.

Information on individual wars has been available since the mid-19th century. For example, in the war waged by

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[1] *Bolshaya meditsinskaya entsiklopediya*, Second ed., 1958, Vol. 5, p. 914.

[2] The following excerpt from Rosenberg's letter to Keitel is sufficient illustration: "Of the 3.6 million POWs, only several hundred thousand are fully capable of working. The overwhelming majority perished from starvation and unfavourable weather." (See J. Kuczynski, op. cit., S. 244.)

[3] R. Desgenettes, *Histoire médicale de l'armée d'Orient*, Paris, 1930, p. 173.

the United States against Mexico and in the American Civil War, the number who perished from accidents was three per cent of the total killed and dead.

There were considerable losses from accidents in the British Army during the Crimean War. Altogether, 2,484 accidents were registered, of which 532 ended fatally.[1] This was about 3 per cent of all lethal losses suffered by Britain in that war, 11 per cent of the battle losses and one-fifth of the number of killed. In addition, 20 people committed suicide.

During the Russo-Turkish War of 1877-78, 1,713 Russian soldiers and officers died as a result of accidents and the heat, or, in other words, 1.5 per cent of all the lethal casualties in that war.[2]

The following data is available on the number of servicemen who died in the German Army during the Franco-Prussian War grouped in the category of "other causes".

Cause of Death		Cause of Death	
No cause indicated . . .	975	Accidents	316
Sudden death	94	Suicides	30

Death from accidents and suicide amounted to 0.8 per cent of the total number of killed and dead in that war. But it is possible that a considerable number of deaths from accidents were listed as "no cause indicated".

In a report on British losses in the Anglo-Boer War we notice a considerable rate of mortality from accidents, namely, 798 soldiers and officers or one-seventh of the killed and 3.6 per cent of all losses in that war.[3] During the Russo-Japanese War 597 Russian soldiers and officers died from accidents and 186 committed suicide.[4] The share of "other causes" amounted to 1.5 per cent of the total number of killed and dead in Russia's Armed Forces.

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[1] A. Laveran, *Traité des maladies et epidemies des armée*, Paris, 1875, p. 248.

[2] E. Knorr, *Das russische Heeres-Sanitätswesen während des Feldzuges 1877-1878*, Hannover, 1883, S. 186.

[3] *Statistics of the Military Effort of the British Empire...*, p. 244.

[4] *Voina s Yaponiyei 1904-1905 gg. Sanitarno-statistischesky ocherk* (The War Against Japan in 1904-1905. Medico-Statistical Essay), Petrograd, 1914, p. 15.

Data on the number of dead from so-called "other causes" in World War I are only available for certain countries. [1]

Cause of death	Germany	Russia	U. S. A.	Bulgaria	Canada	Australia
Accidents	13,470	3,857	4,421	888	1,029	1,008
Suicides	5,106	786	272	—	—	—
Murders	294	—	154	—	—	—

In Bulgaria losses from accidents amounted to one per cent of all losses, in Russia 0.3 per cent, Germany 0.6 per cent, Canada and Australia 1.7 per cent and in the United States about 4 per cent. This big difference is partly due to incomplete accounting and partly to the different interpretations of the term "accident". Americans, for example, use the term "non-battle injuries", which includes categories of wounds not always related to accidents. In general, it may be assumed that all cases of death from "other causes" covered not more than 1 per cent of the total number of killed and dead in World War I. [2]

The share of "other causes" was approximately the same during the Civil War in Soviet Russia (1918-20). A selective study made of the list of front-line casualties showed that of the 1,170 men who perished at the front, six committed suicide and four died of accidents. [3] This

[1] "Sanitätsbericht usw.", Bd. III, S. 25; "Die deutschen Verluste im Weltkrieg nach Todenursachen", *Wirtschaft und Statistik*, 1923, S. 582-84; V. Avramov, op. cit., p. 40; *Bulletin mensuel de statistique* No. 5, 1946, p. 190; No. 6, 1946, p. 233; *Summary of Casualties Among Members of the American Expeditionary Forces During the World War*, Washington, 1920, p. 11.

[2] There was a much bigger share of accident victims among soldiers and officers admitted to hospital, but lethality from these injuries was much lower than in the case of battle injuries. That the percentage of accidents in the 1914-18 war was rather high is shown by the following French data. Huber reports that out of the total of 3,153,000 injured in the war, 2,391,000 were wounded in battle, 128,000 were victims of gas attacks and 634,000 were victims of accidents, i. e., the latter comprised more than one-fifth of the total (M. Huber, op. cit., p. 430). This number possibly included a wide range of injuries and burns received in battle.

[3] *Imennoi spisok poter na frontakh* (Name-List of Losses at the Fronts), 1926.

is approximately one per cent of the lethal battle casualties. If we take into account the number who died from disease the share of deaths from "other causes" will be even smaller.

In World War II the share of accidents among the causes of death rose substantially. The explanation is easy: the development of armaments in general and the wide use of aircraft in particular, led to a considerable increase in the number of non-battle injuries. The Bulletin of the Medical Department of the U.S. Army shows that mortality from non-battle injuries rose greatly as compared with World War I, chiefly as a result of airplane crashes. While in 1914-18 mortality from accidents in the army was lower than among the civilian population, in the 1939-45 war it was 50 per cent higher. [1]

According to some reports, of the 5,497 servicemen admitted to the Tobruk hospital, only 4,495 had battle wounds; the other 1,002, i.e., almost one-fifth, entered the hospital chiefly due to accidents. [2] At times mortality from accidents even exceeded deaths from wounds and diseases. Thus, in American hospitals in the Mediterranean area, 37 people died from wounds and diseases in 1943 while 64 people perished in automobile crashes. [3]

In fact, 1,996,000 American soldiers and officers were admitted to hospital with non-battle injuries compared to 592,000 with battle wounds. [4] In other words the number of victims of accidents was 3.5 times greater than the number of wounded in battle! Summary data for a number of countries confirm the huge number of accident victims during World War II.

The table shows that deaths from accidents in World War II reached substantial proportions. In the Canadian Army mortality from accidents comprised almost one-sixth

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[1] "Morbidity in the Two World Wars", *The Bulletin of the U.S. Army Medical Department* No. 75, 1944, p. 61.

[2] P. Wiles, "Analysis of Battle Casualties Admitted to Middle East Hospitals from April 1942 to March 31, 1943", *The Lancet* No. 6295, April 22, 1944, p. 523.

[3] H. J. Hutter, "Medical Service of the Mediterranean Base Section", *Military Surgeon* No. 1, 1945, p. 44.

[4] *Preventive Medicine in World War II*, Washington, 1958, Vol. IV, p. 8.

Victims of Accidents in the Army During World War II as Compared with the Total Number of Dead *

Country	Total killed and dead soldiers and officers	of which		Share of deaths from accidents among all deaths, percentage
		deaths from accidents	deaths from wounds and disease	
United States . .	302,268	43,835 **	40,949	15
Canada *** . . .	22,533	3,277	5,373	15
Australia	22,810	2,837	4,847	12
New Zealand . .	6,827	347	1,613	5

* *Bulletin mensuel de statistique* No. 5, 1946, p. 190; No. 6, p. 233. Columns four and five have been calculated by us. Data for the U. S. A. are taken from the book by Beebe, op. cit., p. 20.

** Including 21,821 victims of air crashes. In addition, there were 7,141 cases of murder, suicide, executions and drowning. Other sources give a considerably higher number of deaths from accidents, namely, 61,640 soldiers and officers died of non-battle injuries in the U. S. Army (*Preventive Medicine in World War II*, Vol. IV, p. 8) and 21,922 in the Navy (*The History of the Medical Department of the United States Navy in World War II*, Washington, 1953, Vol. III, p. 72).

*** Only in the army.

of all war losses. In the U.S. Army the number of victims from accidents was greater than the combined number of dead from wounds and disease!

There is no information on the scale of injuries in other armies but it can be safely assumed that in all armies it was higher than in past wars due to the use of modern weapons, the increased role of aircraft and other causes. Even if we assume that in other armies the percentage of deaths from accidents was half of that in the New Zealand Army (which had the lowest loss from injuries among the four countries given in the above table), the number of soldiers and officers who perished from accidents in World War II runs into hundreds of thousands.

PART IV. TOTAL WAR LOSSES

Chapter I. WARS IN THE PERIOD OF PRE-MONOPOLY CAPITALISM

In the preceding chapters we examined various categories of war losses. Now our aim is to sum up the total number of killed and dead soldiers and officers. It is, of course, impossible to obtain precise estimates because, as pointed out earlier, there are no sufficiently reliable data on many categories of losses. Therefore, it is advisable to make a summary computation which will give at least a rough idea of the total war losses among servicemen. A further, more detailed analysis of published and archive material will naturally be useful in verifying and correcting these estimates.

In the 17th century, according to the calculations we gave earlier, the total number of lethal battle casualties was 1.1 million and losses from disease were 2.2 million. *Altogether, direct losses among servicemen exceeded 3 million* in that century.

Here are data on losses in the biggest European wars of the 18th century:

Wars	Number of killed and dead (thousands)	Wars	Number of killed and dead (thousands)
Revolutionary wars* . .	1,100	Seven Years' War . . .	550
Turkish wars	900	War of the Austrian Succession	450
War of the Spanish Succession	700	Northern War	300

* Including losses in 1800 (140,000 men).

In other wars less than 100,000 men perished.

Total losses in 18th-century wars exceeded 4 million men.

Total losses in 18th-century *national liberation and civil wars* can be estimated only approximately. On the basis of fragmentary material it may be assumed that some *450,000 men perished in national-liberation and civil wars in Europe during that century.*

In the 18th-century colonial wars the losses of France, Britain and Spain may be estimated at 500,000. The Russians also suffered considerably in the Caucasus and Central Asia and it was claimed that Russia conquered the Caucasus and Central Asia at the cost of 200,000 lives.[1] However, the figure given by the historian *Boltin*, who estimates Russian losses at 40,000-50,000 men, is far closer to the truth. It may be assumed that in the 18th century Russia lost in all about 150,000 men in killed and dead in the Caucasus and Central Asia.

Thus, *650,000 men perished in 18th-century colonial wars in the colonialist armies. The number of victims among the population of the colonies was many times greater.*

Total losses in all 18th-century wars exceeded 5,000,000 men.

The French suffered tremendous losses during the Napoleonic wars. According to our computations, 900,000 French soldiers and officers (including those who perished in captivity) died from disease. By adding the 306,000 killed and dead from wounds we get the total of 1,200,000.

Russia lost approximately 450,000 men in wars against Napoleon, according to our computations.[2]

Guided by the ratio between losses from disease and battle losses (3 : 1 at that time) and various other data, we can estimate approximately the losses of the German states at 400,000 men; Austrians, at less than 200,000;

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[1] *Istorichesky ocherk Kavkazskikh voin ot ikh nachala do prisoyedineniya Gruzii* (Historic Essay on the Caucasian Wars from the Beginning up to Georgia's Joining of Russia), Tiflis, 1899.

[2] S. Dumas (op. cit., p. 32) cites a figure of 289,000 *killed* Russians in the wars against France. He refers to the *Danzers Armee-Zeitung* No. 42, October 16, 1913, which, in honour of the Centenary of the Battle of Leipzig, carried an article on losses in Napoleonic wars. But Dumas was mistaken — the newspaper's figure was for *killed and wounded.*

Spaniards, more than 300,000[1]; British, 243,000; Italians, 120,000; Portuguese, 50,000 and other European peoples, 130,000. The losses of European countries in wars against Napoleon exceeded 1.5 million killed and dead. Together with Napoleon's own losses these amount to some *3.1 million men.*

The "Hundred Days" in 1815 ended the period of the Napoleonic wars. Napoleon himself was exiled to the distant island of Saint Helena where he lived for another six years, sadly contemplating the mistakes he had made and drawing up "childish and mendacious plans on how he would have made mankind happy had he retained power".[2]

After the Vienna Congress, Europe entered a period of wars between individual states, frequent insurrections by the oppressed classes and peoples and cruel wars in the colonies.

It is easier to estimate the losses in this period because relatively exact data for different types of casualties and for the various armies are available. But, to gain a complete picture, it is frequently necessary to resort to rough estimates.

The following table of losses in wars between 1815 and 1897 can be drawn up on the basis of our estimates.

Wars	Number of killed and dead soldiers and officers (thousands)	Wars	Number of killed and dead soldiers and officers (thousands)
Crimean	309	Russo-Persian	24
Russo-Turkish of 1828-29	205	Austro-Sardinian	11
Russo-Turkish of 1877-78	190	Prusso-Danish	5
Franco-Prussian	188	Graeco-Turkish	5
Austro-Prussian	34	Austro-Prusso-Danish	4.5
Italian	27	Serbian-Bulgarian	3

[1] The figure of 300,000 is also given by the Spanish historian and political leader F. Pi-y-Margall in *Las grandes conmociones politicas en España* (p. 206), in which he stated that "the war for independence cost Spain 300,000 lives".

[2] L. Tolstoi, *War and Peace*, London, 1943, p. 1255.

Total losses in wars between states were distributed as follows:

Number of Killed and Dead in Wars Between States from 1815 to 1897

Country	Thousands	Country	Thousands
Russia	388	Great Britain	23
France	243	Italy	14
Turkey	203	Balkan countries	7
Germany	64	Denmark	5
Austria-Hungary	41		

Russia, France and Turkey sustained the greatest losses in the wars of that period.

* * *

Let us go over to another group of wars — *civil* and *national-liberation wars.*

Losses in civil and national-liberation wars could be summed up as follows:

Number of Killed and Dead in Civil and National-Liberation Wars Between 1815 and 1897

Wars	Thousands
Civil war in Spain (1820-23)	100
Hungarian insurrection (1848-49)	100
Polish liberatory insurrection (1830-31)	70
Greek war of liberation (1821-28)	60
Civil war in Spain and Portugal (1832-40)	50
Paris Commune (1871 *)	20
Polish liberatory insurrection (1863-64 *)	10
Serbian-Turkish war of liberation (1877-78)	5
Occupation of Bosnia and Herzegovina (1878 *)	5
War for the unification of Italy (1860 *)	3

* Number of killed; losses from disease were insignificant.

Since other civil and national-liberation wars were fought in that period, it may be held that altogether *about 500,000 men* perished during these wars in Europe from 1815 to 1897. Spain, which had three civil wars in the 19th century, suffered the biggest losses. [1]

[1] The third civil war in Spain in the 1870s is not listed in the table since losses were minimal.

* * *

Let us now estimate the number who perished in the third group—*colonial* wars fought outside the European continent. In this group of wars only the losses of the European armies can be estimated, and then only roughly. We pointed out earlier that battle losses of the local population which fought against the colonialists were tens of times greater than those of the well-armed European soldiers.

European Losses in Colonial Wars from 1815 to 1897

Continent	Thousands	Per cent of total
Asia	261	57
Africa	105	23
America	86	19
Australia and New Zealand	3	1
Total	455	100

The greatest casualties were sustained in the conquest of Asia where the population presented the colonialists with a far more serious resistance than the Africans. Losses were greatly increased by the epidemics which raged among European armies in Asia. These epidemics inflicted even greater damage on the local population.

Casualties in colonial wars in America were connected not with the conquest but with the loss of American colonies by the European powers and with their unsuccessful attempts at new conquests. During this period Spain fought several unsuccessful wars to preserve her colonies in Latin America, while Napoleon III tried to conquer Mexico. The peoples in Latin American countries defeated the armies of the European powers and won independence.

Losses in colonial wars were as follows:

Country	Thousands
Russia	141
France	112
Britain	88
Spain	78
Netherlands	30
Italy	6
Total	455

Russia had the biggest losses owing to high mortality from disease in the Caucasian wars. Our estimates show that in 80 years of the 19th century the colonialists sacrificed the lives of some 500,000 young Europeans. If we add on the losses of the local population, the total number of victims of colonial wars will run into the millions.

Chapter II. WARS IN THE PERIOD OF IMPERIALISM

§ 1. Prior to World War I

At the end of the 19th century, the world was already divided between the main capitalist countries. Struggle for markets, spheres of influence and strategic raw materials led to constant warring between the imperialist powers in their attempts to redivide the world.

In the first war of this period, the *Spanish-American War of 1898*, both sides lost about 5,000 in killed and dead from wounds; in addition, 5,500 Americans died from disease.[1] If we assume that as many Spaniards died from disease, total losses for this war amount to approximately 16,000.

Losses in the *Russo-Japanese War of 1904-05* were as follows: irreplaceable battle losses for the Army and Navy of both belligerents amounted to 99,000 and 40,000 died from disease giving a total of 139,000 dead in that war.

In the *Italo-Turkish War of 1911-12*, 6,000 people were killed and mortality from disease was insignificant. In the Italian Army 1,948 men died from disease[2] although, as was the case in other wars, the Turkish Army suffered far more heavily in this respect.

If we assume that twice as many Turks died from disease as Italians, the figure will be 4,000. The number of dead from wounds can be established as follows: in

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[1] Kübler, "Kriegs-Sanitätstatistik", *Klinisches Jahrbuch*, Bd. IX, 1902, S. 300-31.

[2] W. C. Askew, *Europe and Italy's Acquisition of Libya, 1911-1912*, 1942, p. 249.

the Italian Army there were 4,250 wounded. Taking a lethality rate of 10 per cent we find that more than 400 died from wounds, whereas in the Turkish Army 1,600 died from wounds. Total losses in this war were approximately 14,000.

In the *Balkan wars* 122,000 men were killed; we estimate the number of dead from disease at 82,000. In the Serbian Army 2,500 died from wounds, i.e., 5 per cent of all wounded (48,000). In the Bulgarian Army 105,000 men were wounded.

Taking a lethality rate of 5 per cent among wounded (like the Serbs) we estimate that 5,000 died from wounds.

In the Turkish Army the number of wounded was close to 150,000 and we assume that 10,000 died from wounds. Together with Greek and Montenegrin losses about 20,000 men died from wounds in the Balkan wars, giving us a total of 224,000. [1]

Returning to colonial wars, let us mention the *Anglo-Boer War of 1899-1902* in which 22,000 British soldiers and officers died.

German losses in her African colonies from 1904 to 1905 are shown in the following table [2]:

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[1] A figure of 462,000 killed and dead during the Balkan wars, more than twice our estimate, has gained wide currency. The absurdity of this figure, as will be subsequently demonstrated, is obvious. It was quoted for the first time by Döring in his summary of war losses ("Menschenverluste im Kriege", *Bulletin der Studiengesellschaft für soziale Folgen des Krieges*, 1916) in which he referred to Schurmann's book *Balkan Wars*, London, 1916, p. 125.

Yet Schurmann cites the following estimates of losses during the Balkan wars: the number of dead and wounded in the Montenegrin armies was 11,200, in the Greek armies, 68,000, in the Serbian, 71,000, and in the Bulgarian armies, 156,000. If we accept the same figure for Turkish losses as for Bulgarian (156,000), the total will be 462,000. Thus Döring's figure of 462,000 men also includes all the wounded. Döring, however, accepted Schurmann's figure as relating only to the dead. This figure of 462,000 dead in the Balkan wars was later used by Bogart (E. Bogart, op. cit., p. 270) who reprinted Döring's entire summary, indicating his sources but without mentioning Döring.

[2] The table is compiled by us on the basis of the name-lists of wounded and dead given in the book *Die Kämpfe der deutschen Truppen in Südwestafrika*, H. 1-6, 1906-1907.

German casualties	Killed	Missing	Died from		Total
			disease	accidents and other causes	
Suppression of rebellion of the Herero tribe . .	127	18	305	6	456
War against the Hottentots	477	56	375	64	972
Total	604	74	680	70	1,428

Before turning to World War I, let us sum up losses for the preceding century, i.e., between 1815 and 1914.[1]

The composition of losses in wars of this period can be presented in the following way (see *Fig. 13*):

Losses by Groups in Wars from 1815 to 1914
(thousands)

Wars	Killed and dead from wounds	Died from disease and other causes	Total
Between states	512	775	1,287
Civil and national-liberation	221	229	450
Colonial	113	367	480
Total	846	1,371	2,217

Thus, in the 100 years from 1815 to 1914 total direct war losses, not counting those among the peaceful population, *exceeded two million men.*

Let us examine the share of each group of wars by categories of losses.

[1] This calculation does not include losses prior to June 18, 1815 (Battle of Waterloo) and after August 1, 1914 (beginning of World War I).

Composition of Losses by Each Group in Wars from 1815 to 1914

(per cent of total)

Wars	Killed and dead from wounds	Died from disease and other causes	Total
Between states	61	56	58
Civil and national-liberation	26	17	20
Colonial	13	27	22
Total	100	100	100

The number of killed and dead in wars between states comprised more than half of all losses, and in civil and national-liberation wars it was about one-fifth.

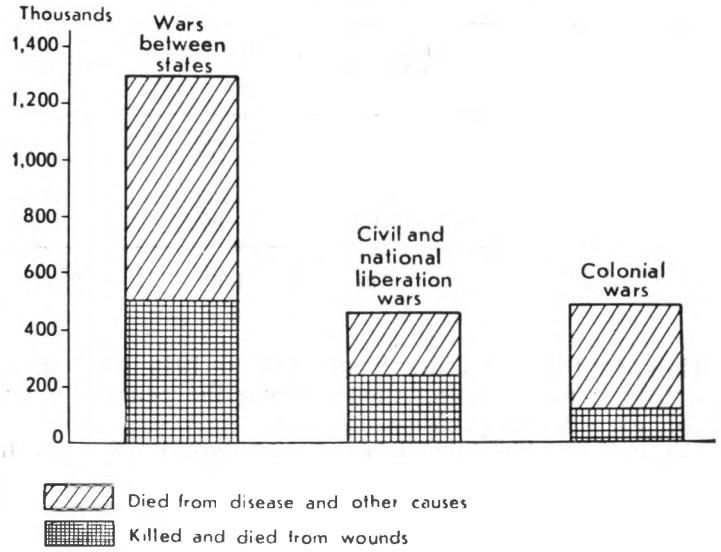

Fig. 13. Losses by Groups of Wars from 1815 to 1914

The composition of losses in each group of wars is seen from the following table:

Composition of Losses in Wars from 1815 to 1914

(per cent)

Wars	Killed and dead from wounds	Died from disease and other causes	Total
Between states	40	60	100
Civil and national-liberation	49	51	100
Colonial	23	77	100
Total	38	62	100

Fig. 14. Losses in Wars by Countries in 1815—1914

The table shows that even in the 19th century the number who died from disease greatly exceeded the number who were killed or died from wounds. The percentage of dead from disease was particularly high in colonial wars.

Losses by countries are distributed as follows (see *Fig. 14*):

Number of Killed and Dead in Wars (1815-1914) *

Country	Killed and dead (thousands)	Share of country in killed and dead (per cent of total)	Share of country in size of population in 1860 (per cent of total)
Russia	672	30.3	22.3
France	376	16.9	11.9
Turkey	360	16.2	10.8 **
Spain	240	10.8	5.2
Balkan countries	169	7.6	—
Austria-Hungary ***	134	6.1	11.6
Britain	134	6.1	9.7
Germany	67	3.0	12.6
Netherlands	30	1.4	1.2
Italy	29	1.3	8.4
Others	6	0.3	6.3
Total	2,217	100.0	100.0

* The population figure for Europe in 1860 is taken from our book *Rost naseleniya v Yevrope* (Growth of Population in Europe), Moscow, 1941, p. 415; the population figure for Asiatic Turkey is taken from M. Mulhall's *Dictionary of Statistics*, London, 1903, p. 450.

** Including the Balkan countries.

*** Up to 1867, the Austrian Empire.

The biggest absolute losses were suffered by Russia, but Turkey and the Balkan states sustained the heaviest losses in proportion to the population.

Let us see how the losses by groups of wars are distributed among the various countries.

The composition of losses by groups of wars reflects, to a certain extent, the nature of the historical development of the given country between 1815 and 1914.

Distribution of War Losses by Countries and Groups of Wars from 1815 to 1914

Country	Wars between states	National—liberation and civil wars	Colonial wars	Total	Wars between states	National—liberation and civil wars	Colonial wars	Total
	thousands				Percentage of total for each country			
Russia	439	92	141	672	65	14	21	100
France	243	21	112	376	65	5	30	100
Turkey	322	38	—	360	89	11	—	100
Spain	10	152	78	240	4	63	33	100
Austria-Hungary *	40	94	—	134	30	70	—	100
Great Britain	23	1	110	134	17	1	82	100
Balkans	122	47	—	169	72	28	—	100
Germany	64	—	3	67	95	—	5	100
Netherlands	—	—	30	30	—	—	100	100
Italy	18	5	6	29	62	17	21	100
Other European countries	5	1	—	6	83	17	—	100
Total	1,286	451	480	2,217	58	20	22	100

* Up to 1867, the Austrian Empire.

Britain, the biggest colonial power, sustained more than four-fifths of all the losses in colonial wars. In Spain most of the losses were caused by civil wars.

During the 100 years between 1815 and 1914 the European powers waged incessant colonial wars in the course of which millions of Asians and Africans perished. In the same period the struggle between the powers for the redivision of the world intensified, culminating in World War I.

§ 2. World War I

From the very first months of the imperialist war it became clear that it was a slaughter without precedent in history.

The first attempts to estimate losses in the 1914-18 war were based on the ratio of casualties to the number of mobilised men. For example, Tandler proceeded from a mortality rate of 6 per cent of the mobilised and, on these grounds, estimated German losses at 600,000 and Austrian at 420,000 men, [1] a percentage which he deduced from the record of the Russo-Japanese War. It is, however, impossible to apply ratios valid for one war to a war of an entirely different nature.

Further attempts to estimate losses were based on official and semi-official data published in different countries.

From time to time the British Government published official data on killed, wounded and missing. For military reasons these bulletins were not regular but they did have the advantage of being frequent. Indeed, by January 1916, 14 such bulletins had been issued.

In Germany no official information on losses was published for a long time. In a speech in the Reichstag, Bethmann-Hollweg, who was Chancellor at that time, confined himself to the statement: "I admit that German losses are heavy." The true scale of these losses was revealed only in a report made by the Reichstag's War Commission, the figures of which soon leaked out to the press. From that report the world learned that in the first year of war Germany suffered casualties of 604,000 killed and dead, 1,556,000 wounded and 318,000 missing. Lists of killed, wounded and missing were printed in Germany daily, with the exception of Mondays, each issue comprising from 16 to 20, and at times up to 40, large-size pages printed in three columns. These lists were published only for the information of servicemen's families and any summary or grouping of this material was strictly forbidden. Thus, the population was almost totally ignorant of the overall figures of German losses.

In Russia lists of killed, wounded and missing, released by the Main Army Headquarters, were also printed. In addition, the Red Cross printed lists of sick and wounded. However, both lists were incomplete.

In a number of countries there were neither official

[1] J. Tandler, *Krieg und Bevölkerung*, Wien und Leipzig, 1916, S. 5.

bulletins nor lists of casualties and during the war the number of killed could be determined only indirectly.

Despite the scarcity of information on losses, the press made every effort to estimate them. For example, after about 18 months of the war, the London *Economist* estimated French casualties at 2,000,000 men, Russian at 5,000,000, Italian at 500,000, Austro-Hungarian at 3,700,000, Belgian and Serbian at 550,000 each and Turkish and Bulgarian at 600,000 each. At the beginning of 1916, the Russian journal *Obshchestvenny vrach* estimated the number of killed, dead and totally disabled at three to four million.

The first serious attempt to determine losses in the 1914-18 war was made by the Copenhagen Society for the Study of the Social Consequences of War. The second issue of the bulletin of this Society, published on August 1, 1916, presented a detailed estimate of the number of killed and wounded in the first two years of the war.[1]

Britain's losses were ascertained on the basis of official data and Germany's on the basis of the above-mentioned lists, whose summarisation within the country was prohibited. Up to July 1, 1916, 1,032 lists were issued, a total of 13,178 pages. A complete survey of the number of killed and wounded enumerated in these lists would have required a lot of hard work and, for this reason, the "selective" method was used. Every tenth list was taken and the average number of persons per page calculated. It was established that there was an average of 262.3 names on each page of which 36.5 had been listed earlier but were repeated for specification and correction. With this adjustment there were 225.8 names per page. By multiplying this figure by the number of pages, the author of the study calculated that total German casualties over 21.5 months of war amounted to 2,976,000; of which 628,000 were killed or dead. After making an adjustment for the number of missing and dead from wounds, the figure of killed and dead was raised to 771,000.

[1] "Menschenverluste im Kriege", *Bulletin der Studiengesellschaft für soziale Folgen des Krieges* No. 2. This bulletin, though unsigned, was undoubtedly written by Döring, who also prepared all the other works of the Society (only one was written by Döring in collaboration with Perasitsch).

It was much harder to estimate French losses. Calculations were based on the number of Frenchmen wounded from September 15 to November 30, 1914. Calculating the number of wounded per month and applying the ratio of the number of killed to the number of wounded, the author of the Copenhagen *Bulletin* arrived at the conclusion that France lost 885,000 men in two years. As was subsequently established, this figure was exaggerated by approximately 33 per cent.

The author made a still bigger mistake in estimating Russian losses. Taking as a basis the wrong proportion between the number of wounded and sick, the author exaggerated the number of wounded and then, on the basis of the ratio between wounded and killed, greatly overestimated the number of killed and dead. According to the *Bulletin* Russia lost 1,498,000 in killed and dead in the first two years of war.

In conclusion, the *Bulletin* estimated that in the first two years of the war *all the belligerents* lost 4.6 million lives, whereas the actual figure was close to 4 million. Thus, the Copenhagen Society's calculations were out by 15 per cent. Despite all the assumptions underlying the author's calculations, the total figure of losses was approximately correct.

More or less complete and exact estimates of losses could be made only after the end of the war and, indeed, many of them appeared soon after hostilities ended.

Of the 31 sources of information on World War I casualties which have come to our knowledge, four cannot be utilised because they do not include Russia or countries of the German bloc. The other sources estimate the number of killed and dead in the war as follows:

Losses in the World War of 1914-18 According to Different Sources

Losses (million men)	Number of sources
Up to 7	2
7–8	4
8–9	13
9–10	4
10 and more	4
Total	27

The modal interval[1] is the one showing losses of 8-9 million men. Half of all the sources estimate losses at over 8 million. The smallest figure for World War I losses was given in the first edition of *Large Soviet Encyclopaedia* (Vol. 12) and the biggest figure was given by Hersch, which is twice as large. This wide discrepancy in figures makes it necessary to examine these sources more closely.

All the sources can be divided into two groups. The first includes calculations made immediately after the war or a few years later; the second includes later calculations (after 1922), drawn up on the basis of more reliable data.

Let us summarise all the calculations of the first group, i.e., those published up to and including 1922.

Data on Losses in the World War I According to Various Sources Published Between 1919 and 1922

Total number of killed and dead (thousands)	Sources
12,997	Bogart
12,000	Döring
12,000	Wolff*
8,666**	*Le Temps*
8,189	British War Office
8,000	*Drapeau bleu*
7,848	Garrison
7,485***	Ayres

* G. Wolff, "Der Menschenverlust im Weltkrieg" *Sozialistische Monatshefte* No. 1, 1921, S. 20.
No. 1, 1921, S. 20.
** Including the number of missing for most belligerents.
*** Only battle losses.

Quite substantial fluctuations in totals are characteristic of estimates for that period. Bogart's estimates greatly exaggerate losses for most countries. After obtaining a total of ten million, Bogart aggravated his error by drawing the false conclusion that half of all the prisoners and missing should be considered dead. In this way he arrived at the total number of 13 million killed and dead, which is quite unreal.

Though Bogart's estimates are erroneous, his figures of losses in World War I unfortunately gained wide

[1] *The modal interval* is the one with the biggest number of cases (here the number of sources) as compared with all other intervals.

currency and were utilised even in encyclopaedias and some monographs. [1]

Special mention should be made of Döring's estimates which became widely known and were frequently quoted. He made his first estimate of losses at the end of October 1919 and published his findings in January 1920. Döring estimated the number of Europeans who perished in the war at 9,829,000. He then added on 500,000 killed from among the inhabitants of Asian Russia, 500,000 Turks, 250,000 soldiers of the British Dominions and India, 52,000 U.S. soldiers, and the losses of French colonial forces and Japan. The total number of killed and dead, according to Döring's calculations, was 12 million, which is a greatly exaggerated figure.

First, even if you add up Döring's figures plus the losses of French colonial forces and Japan, the total comes to only 11.2 million. Second, his calculation of Russian losses is based on very few facts. He proceeded from a figure of 1.5 million killed and dead in the first two years of war, estimated by himself as early as 1916. But this calculation was based on the ratio of killed and wounded established from information covering only 28,557 soldiers. Moreover, he exaggerated the number of wounded. This utterly wrong figure of 1.5 million in two years of war Döring then increased to 2.56 million, i.e., by 71 per cent, proceeding from the assumption that in the second half of the war Russia's monthly losses remained at the same level as in the first half. In reality, however, the monthly losses in 1916 and 1917 were much lower than in 1914 and 1915. (Thus, exaggerating the initial figure, he further compounded his felony.) Döring set Russia's losses at 3 million in killed and dead, a figure which considerably exceeded actual losses.

Döring also presents an absolutely fantastic figure of killed (690,000) for Serbia. In so doing he refers to the journal *Serbia* (No. 14, 1919), which points out that this number includes all those subject to military duty (but not mobilised), killed in battle and also all those who died from wounds and disease on Corfu and in captivity.

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[1] For example, his calculations are quoted by F. W. Hirst in *The Consequences of the War to Great Britain*, London, 1934, p. 295.

As we pointed out earlier, this figure is absolutely incredible. Döring made exaggerated calculations for Austria-Hungary, too. For Russia alone he overestimated losses by 1.2 million men and groundlessly added to the total 0.5 million for one country and 0.8 million for another country; in other words, Döring's estimates of total losses in World War I are exaggerated by 2.5 million.

In the second period, i.e., since 1923, the authors of estimates on war losses were in a better position since by that time additional official and semi-official material had been published. A summary of such estimates follows:

Summary Data on Losses in World War I According to Various Sources Published Since 1923

Total number of killed and dead (thousands)	Countries for which no information on losses is given	Source
9,458		Willcox
8,559		U. S. War Department
9,164 *	U. S. A., Rumania, Serbia, Bulgaria, Turkey	Döring (second estimate)
9,029	Turkey, Greece	International Labour Office
13,033	—	Hersch
8,720	Turkey, Belgium, Rumania	Institute of World Economy and World Politics, U.S.S.R.
8,580	Greece, Portugal, Turkey	Large Soviet Encyclopaedia (First Edition)
8,540	—	*World Almanac*
8,736	—	Larcher
13,000	—	Pavlovich
8,538	—	Encyclopaedia Britannica

* The figure for Russia (3 million), not given in Döring's second estimate, is added in accordance with his first estimate.

Estimates of Russia's losses made by different authors should be examined in detail. Some sources (Ayres and the U. S. War Department) name a figure close to our own—1.7 million men.

Unfortunately, the figure of 2.5 million men, mentioned for the first time by Döring, gained wide currency and was also accepted by Pavlovich, who considered that it

covered only those killed on the battlefield. Pavlovich set the total number of killed and dead in the 1914-18 war at 13 million. His mistake lay in the fact that to the ten million war victims he added a further 50 per cent from among the 6 million missing and POWs.[1] Such a calculation was of course wrong.

Hersch gave the highest figure for Russian losses but it also included losses in the Civil War. However, even making allowance for Civil War losses, Hersch's figure is twice as high as our estimate.

Summing up the information given earlier, we can draw up the following table of data on Russia's losses in the 1914-18 war:

Category of losses	Thousands
Killed	1,200
Died from wounds	240
Died from poison gas	11
Total irreplaceable battle losses	1,451
Died from disease	155
Died in captivity	190
Died from accidents and other causes	15
Total irreplaceable non-battle losses	360
Grand total	1,811

Our estimate of Russia's losses in the 1914-18 war can be counter-checked with local selective surveys made after the war. We know of two such surveys, in the Ukraine and the Don area.

The survey in the Ukraine was made in the autumn of 1923 and covered 50,610 households with a total of 263,564 people. Although this was only 1.2 per cent of the overall rural population of the Ukraine, the absolute number of peasants included in the survey was sufficiently large to calculate reliable figures on its basis. Here are the results of the survey[2]:

[1] M. Pavlovich, *Itogi mirovoi voiny* (Results of the World War), Moscow, 1924, p. 7.

[2] *Materialy o sotsialno-gigienicheskom sostoyanii ukrainskoi derevni* (Material on Socio-Hygienic Condition of the Ukrainian Village), Kharkov, 1924, p. 35.

Losses of the Ukraine's Population According to a Special Survey

Studied population	263,564
of which:	
Killed in European war	2,201
Missing	1,307
Total killed and missing	3,508

Thus, counting the killed and all the missing, we find that 1.33 per cent of the Ukraine's rural population perished in the 1914-18 war.[1] If we take our figure of losses of 1,811,000 killed and dead in relation to the total population of Russia (164 million)[2] we find that the losses amounted to 1.1 per cent of the population, i.e., somewhat less than showed by the survey in the Ukraine. Taking into account the fact that, first, losses in the cities were smaller than in the countryside and, second, that a certain part of the missing did not perish, we may assert that the results of the survey fully corroborate our figure of Russia's losses.

The survey in the Don area covered 3,339 households with a population of 18,090, or 2.4 per cent of the entire rural population of that area.[3] The percentage of killed

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[1] Regarding this selective survey as a random sample, it is possible to calculate the following limits of its probable errors. The sampling error (μ) is determined by the formula

$$\mu \approx \sqrt{\frac{w\,(1-w)}{n}\left(1-\frac{n}{N}\right)},$$

where w is the sampling ratio,
n — the size of the sample,
N — the size of the general totality.
For our survey this will be:

$$\mu \approx \sqrt{\frac{0.013\,(1-0.013)}{263{,}564}\cdot(1-0.012)} \approx 0.0002.$$

Taking a triple average error (which gives a probability of 0.997 that the percentage for the entire population will be within the limits we established), we will find that the average percentage of Ukrainian rural inhabitants who died in the war will be not less than 1.27 and not more than 1.39.

[2] *Bulleten TsSU* No. 55, 1921; Finland is not taken into account because she did not participate in the 1914-17 war.

[3] A. Gozulov, "Experience in Studying the Influence Exerted by the Size of Farms on the Socio-Hygienic Condition of the Countryside", *Vestnik statistiki*, Vol. 23, No. 10-12, 1925, p. 183.

and missing was 1.21 of the surveyed population,[1] which is also close to our percentage. Thus, our estimate of Russia's losses at 1.8 million killed and dead in the 1914-18 war is corroborated by two local surveys.[2]

It should be noted that the figures of losses given in the various sources differ greatly.

Comparison of Estimates of Losses in the 1914-18 War as Given by Different Sources

Country	Number of killed and dead in the 1914-18 war		How many times the maximum figure exceeds the minimum figure
	Maximum figure	Minimum figure	
	thousands		
Serbia	707	40	18
Russia	5,350	775	7
Rumania	400	100	4
Belgium	267	14	19
U. S. A.	133	40	3
Italy	750	364	2
Bulgaria	101	33	3
Portugal	8	2	4
British Empire	1,082	674	1.6
Austria-Hungary	1,543	688	2.2

Such big divergences show that a number of sources are unreliable. In the case of some countries these divergences are explained by the different content invested in each figure. Some sources give only the figure of killed, other sources present all losses in killed and dead; some include the colonial forces, others do not; some include the Navy, others do not. This creates the need for systematising all figures and statistical material on losses.

[1] Applying the same allowances for error in a random sample we obtain a probability of 0.997 that the average percentage of Don rural inhabitants who died in the war was not less than 0.97 and not more than 1.45.

[2] Although the two local surveys deal with the number of killed and missing, it is reasonable to assume that the polled population included in this number all cases of deaths in the war, i.e., all cases of deaths from wounds, disease, accidents and captivity.

Our calculations for World War I losses can be presented in the following way (see *Fig. 15*):

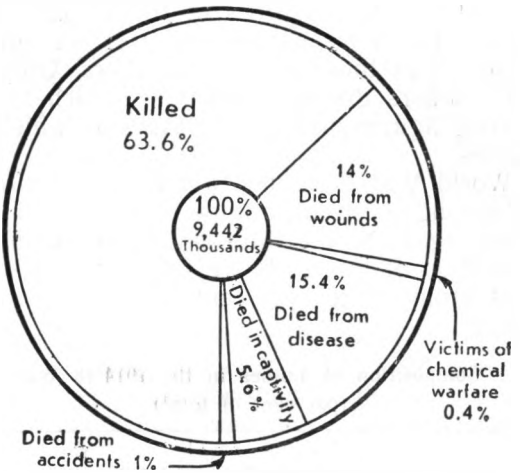

Fig. 15. Share of Dead in World War I by Categories of Losses

Number of Soldiers and Officers Killed in World War I (According to Causes of Death)

(thousands)

Category of losses	Entente	Central Powers	Total
Battle losses:			
Killed	3,506	2,499	6,005
Died from wounds . .	754	571	1,325
" " poison gas . .	33	6	39
Total battle losses	4,293	3,076	7,369
Non-battle losses:			
Died from disease . . .	675	777	1,452
" in captivity . . .	386	143	529
" from accidents and other causes	59	33	92
Total non-battle losses	1,120	953	2,073
Grand total . . .	5,413	4,029	9,442

According to our estimates, 9,442,000 soldiers and officers perished in World War I. This figure is close to those quoted by other sources of the second period, despite the fact that for separate countries our figures differ considerably from those of many authors. Only Hersch's total result differs greatly from ours, which is explained by the wrong figures of Russian losses on which he bases his estimates.

Thus, World War I claimed a toll of *9.5 million killed and dead* among servicemen alone.

Referring again to the table on p. 201 let us examine the composition of losses. If we take total losses of each belligerent group as 100 per cent, the following table can be presented:

Composition of Losses in the 1914-18 War
(per cent of total)

Category of losses	Entente	Central Powers	Total
Battle losses:			
Killed	64.8	62.0	63.6
Died from wounds . .	13.9	14.2	14.0
" from poison gas . .	0.6	0.1	0.4
Total battle losses	79.3	76.3	78.0
Non-battle losses:			
Died from disease . . .	12.5	19.3	15.4
" in captivity . . .	7.1	3.6	5.6
" from accidents and other causes	1.1	0.8	1.0
Total non-battle losses	20.7	23.7	22.0
All losses	100.0	100.0	100.0

This table shows that four-fifths of all the dead are battle losses. For each one who died from disease there are more than four killed.

In past wars the ratio at times was the reverse. Epidemiological advances have sharply reduced the incidence

of disease in armies. At the outbreak of World War I, many of the world's leading epidemiologists considered that the number of dead from contagious diseases would equal the number of killed. For example, Dr. Tarasevich, a well-known epidemiologist, in his speech at a meeting of bacteriologists and representatives of medical organisations on December 28, 1914, said: "If we assume that in the present war the same favourable proportion (i.e., 1 : 1.—*B. U.*) will be preserved—and there is little hope for it—even then the number of infectious sick will be tremendous." [1]

This did not happen, however, and although epidemics did break out, they were on a far smaller scale than in previous wars.

The proportion of dead from disease for all armies in World War I was 15 per cent of the total number of soldiers and officers who perished in the war. Fluctuations from country to country were not particularly great. Only in the case of Turkey and Serbia can we point to any extensive spread of disease in the army.

It would be wrong to consider that there was any great distinction between the Eastern and Western fronts as regards the percentage of losses due to illness. This mistaken view was expressed in the work of *Notestein*, an American demographer, and his colleagues, concerning the future size of Europe's population: "In the three major Western armies, over half of all mortality was attributable to deaths on the battlefield and a large part of the remainder was due to deaths from wounds. As might be expected, disease played a much greater role in the East. Roughly, one-fourth of the fatalities in the Austro-Hungarian armies were attributable to disease, as compared with about 10 per cent in the German Army and about 13 per cent in the French Army. Probably a third to a half of Italian losses were a result of disease." [2] This quotation contains several wrong assertions. First, in the Western armies only one-seventh died from wounds. Second, the share of dead from disease on the Eastern front

[1] *Obshchestvenny vrach* No. 2, 1915, p. 2.

[2] F. W. Notestein and others, *The Future Population of Europe and the Soviet Union. Population Projections*, 1944, p. 79.

was not higher than that on the Western front. Third, in the Austro-Hungarian Army not 25 but 11 per cent of all fatalities were attributable to disease. The authors evidently obtained the figure of 25 per cent by comparing the 300,000 who died from disease and wounds to the total number who perished (1,100,000) forgetting that the first figure also included dead from wounds. Fourth, the share of dead from disease in the Italian army did not reach 33-50 per cent of all losses. Even if we include all Italians who perished in captivity, the share of dead from disease will not reach one-fourth.

The new weapon, poison gas, used by the Germans, had little effect on the total losses. The use of gas was effective only at the beginning. Subsequently, as protective measures were taken, lethality among men poisoned by gas dropped. In 1915 and 1916 1 out of 4 died, in 1917—1 out of 12 and in 1918—1 out of 36.[1]

Let us now examine the proportion of losses among the belligerent nations (per cent):

Category of losses	Entente	Central Powers	Total
Battle:			
Killed	58	42	100
Died from wounds . . .	57	43	100
" from poison gas . .	85	15	100
Total battle losses	58	42	100
Non-battle:			
Died from disease . . .	46	54	100
" in captivity . . .	73	27	100
" from accidents and other causes	64	36	100
Total non-battle losses	54	46	100
All losses	57	43	100

[1] *Statistical Bulletin of Metropolitan Insurance Co.*, September 1943, p. 2.

German-bloc losses were smaller than those of the Allies. On the average there were 1,344 allied soldiers and officers killed to every 1,000 dead German-bloc soldiers and officers. The difference was biggest in losses from chemical warfare, in which the Germans enjoyed the advantage of surprise. It is noteworthy that almost three-fourths of all who died in captivity were soldiers of the countries in the anti-German bloc. This is explained by the hard living conditions of POWs in Germany and Austria.

The Central Powers were defeated in the war, losing 4 million men, while the Allies won, losing 5.4 million men, i.e., 35 per cent more. Such a considerable excess in losses is explained by the unpreparedness of France and Russia for war against Germany in 1914. The Russian Army suffered big losses owing to the incompetent command of a number of tsarist generals and inadequate provision with weapons. The French Army also sustained big losses. The poorly armed infantry stemmed the German onslaught on the Marne and at Verdun only at the price of a tremendous number of lives.

The British Army, which had no battle experience and insufficient military training, at first also suffered losses bigger than those of the Germans. But, as it became battle-seasoned and improved its defence, the proportion of losses systematically improved in favour of the British, as shown by the following table [1]:

Comparison of Casualties of the British and German Armies in 1915-18

(thousands)

Years	British	German	British casualties per 1,000 German losses
1915 (not including January)	267.6	110.3	2,426
1916	600.6	297.4	2,020
1917	759.6	447.6	1,697
1918 (not including November)	805.8	825.1	977

[1] Summed up and calculated by us on the basis of *Statistics of the Military Effort of the British Empire...*, pp. 359-62.

While at the beginning of the war British casualties were almost 2.5 times greater than German, in the final phase German casualties exceeded the British. But this could no longer affect the proportion of casualties for the war as a whole.

It should also be noted that in relation to the strength of armed forces allied losses were smaller than those of the Central Powers. The latter's losses reached one-sixth of their entire military strength, while Allied losses were less than one-eighth.

The distribution of war losses by parts of the world is also of interest (See *Fig. 16*):

Number of Killed and Dead in World War I

Continent	Thousands	Per cent of total
Europe	8,185	86.7
Asia	935	9.9
America	179	1.9
Oceania	76	0.8
Africa	67	0.7
Total	9,442	100.0

Almost nine-tenths of all World War I losses were borne by Europeans. Of the 935,000 who perished in Asia 720,000 were from Turkey, about 150,000 from the Asian part of Russia [1] and the rest were Indian soldiers. Soldiers from Indo-China made up less than 0.1 per cent.

[1] This figure is deduced from material published in *Trudy komissii...* (pp. 214-17), which, on the basis of the name-lists of the Main Army Headquarters (Nos. 1-1140), gives the total number of Russian soldiers put out of action prior to the spring of 1915, broken down by regions. Our computations showed that more than 6 per cent of all casualties and 5 per cent of all killed came from the Asian part of Russia. Since the share of inhabitants of these regions who were in the ranks of the army in the field subsequently increased, we considered it possible to raise the percentage of losses to 8 per cent, which in round figures amounts to 150,000 men.

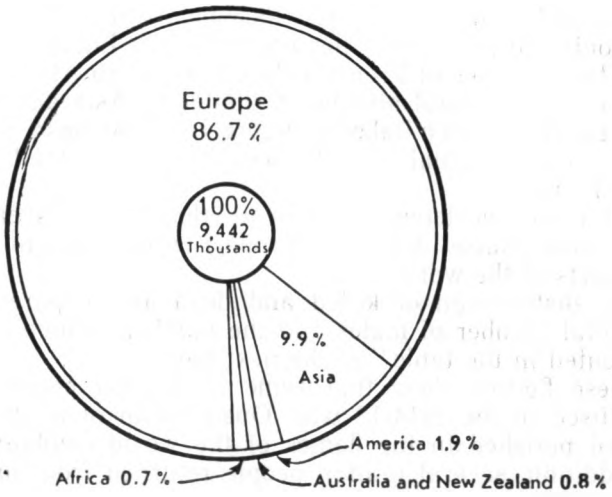

Fig. 16. Share of Dead in World War I by Parts of the World

American losses consisted of soldiers and officers from the United States, Canada, Newfoundland and France's American colonies.

Hersch also distributed losses by parts of the world.[1]

Part of the world	Thousands
Europe	12,637
America	174
Africa	99
Oceania	76
Asia	69
Total	13,055

Hersch's estimates are inexact. First, the total figure, as we pointed out earlier, is greatly exaggerated because of his wrong calculation of Russian losses. Moreover, he did not take into account the fact that Russian and Turkish losses should be distributed between Europe and Asia and not simply included in European losses. This is

[1] L. Hersch, "Demographic Effects of Modern Warfare" in symposium *What Would Be the Character of a New War?*, London, 1933, p. 29.

particularly true of Turkey, which before the 1914-18 war had only ten per cent of her population in Europe. Hersch credits the losses of French colonial forces to Africa, while part of them should also be attributed to Asia and America. Lastly, Hersch takes a figure of 5,000 dead for Japan, while in actual fact she bore no losses at all in the 1914-18 war.

All these shortcomings indicate that Hersch's calculations give a false idea of the proportion of losses in different parts of the world.

The distribution of killed and dead as compared with the total number of males and the number of mobilised is presented in the table[1] on the next page.

These figures show that some 70 million people were mobilised in the 1914-18 war. One-seventh of all the mobilised perished in the flames of the world conflagration. In addition, several million people returned from the war as invalids.

The anti-German coalition mobilised about 45 million men and the German bloc, 25 million. Thus, the anti-German coalition had almost a 2 : 1 superiority in strength. Owing to a shortage of men, the Central Powers had to utilise their military units more intensively; as a result, the share of killed and dead among the mobilised was almost 50 per cent higher than among the Allied forces.

Examining data for the different countries we find that the gravity of human losses fluctuated within a very wide range. To illustrate this point more clearly, we have drawn up a table which gives the place held by each of the 20 belligerent countries in total losses and losses per 1.000 of population, males and mobilised (see page 210).

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[1] Data in columns 3, 4 and 5 are taken from the following sources: 1) *Enquête sur la production*, t. IV, pp. 9, 29; 2) L. Hersch, *La mortalité...*, p. 131; 3) M. Huber, op. cit., pp. 110, 444; 4) *Annuaire international de statistique*, Vol. III, V; 5) *Rossiya v mirovoi voine...*, p. 20; 6) *Statistisches Jahrbuch für das Deutsche Reich*, 1921/1922, S. 27; 7) V. E. Den, *Novaya Yevropa* (New Europe), Petrograd, 1922, pp. 62, 64, 83; 8) *Obshchy svod po Imperii. Rezultat razrabotki dannykh pervoi vseobshchei perepisi naseleniya, proizvedennoi 28 yanvarya 1897 g.* (General Summary for the Empire. Results of Processing Data of the First General Population Census Taken on January 28, 1897), 1905, pp. 56-58.

Losses in the 1914-18 War by Countries

Country	Killed and dead	Mobilised	Males 15 to 49 years of age	Total population	Killed and dead per 1,000 of		
	Thousands			Millions	mobilised	males 15 to 49 years	total population
1	2	3	4	5	6	7	8
Anti-German bloc							
Russia	1,811	15,798	40,080	167.0	115	45	11
France	1,327	7,891	9,981	39.6	168	133	34
Great Britain	715	5,704	11,539	46.1	125	62	16
Italy	578	5,615	7,767	35.9	103	75	16
Serbia and Montenegro	278	750	1,225	4.9	371	227	57
Rumania	250	1,000	1,900	7.6	250	132	33
U. S. A.	114	4,273	25,541	98.8	27	4	1.15
French colonies	71	449	13,200	52.7	158	5	1.3
Canada	61	629	2,320	8.1	97	26	7.5
Australia	60	413	1,370	4.9	145	44	12
India	54	953	82,600	321.8	57	1	0.2
Belgium	38	365	1,924	7.6	104	20	5.0
Greece	26	353	1,235	4.9	73	21	5.3
New Zealand	16	129	320	1.1	124	50	15
South Africa	7	136	1,700	6.3	51	4	1.1
Portugal	7	100	1,315	6.1	70	5	1.15
Total	5,413	44,558	204,017	813.4	121	26	6
German bloc							
Germany	2,037	13,200	16,316	67.8	154	125	30
Austria-Hungary	1,100	9,000	12,176	58.6	122	90	19
Turkey	804	2,998	5,425	21.7	268	148	37
Bulgaria	88	400	1,100	4.7	220	80	19
Total	4,029	25,598	35,017	152.8	157	115	26
Grand total	9,442	70,156	239,034	966.2	135	39	10

Country	Place held by each country				
	Total number		Killed and dead per 1,000 of		
	Killed and dead	Mobilised	Population	Males from 15 to 49 years	Mobilised
1	2	3	4	5	6
Germany	1	2	5	5	7
Russia	2	1	12	11	12
France	3	4	3	3	5
Austria-Hungary	4	3	6	6	11
Turkey	5	8	2	2	2
Britain	6	5	9	9	9
Italy	7	6	8	8	14
Serbia and Montenegro	8	11	1	1	1
Rumania	9	9	4	4	3
U. S. A.	10	7	18	19	20
Bulgaria	11	15	7	7	4
French colonies	12	13	16	16	6
Canada	13	12	13	13	15
Australia	14	14	11	12	8
India	15	10	20	20	18
Belgium	16	16	15	15	13
Greece	17	17	14	14	16
New Zealand	18	19	10	10	10
South Africa	19	18	19	18	19
Portugal	20	20	17	17	17

Germany, the instigator of the war, sustained the biggest losses, but Russia held first place for the number of mobilised.

Serbia and Montenegro held first place for the number of war losses in relation to the entire population, losing 5.7 per cent of their entire population in the war, not counting civilian victims; Turkey (3.7 per cent) was second, followed by France (3.4 per cent); Germany's losses amounted to 3 per cent of the population. The United States and India had the smallest losses in relation to the population.

A comparison of the number of killed and dead with the number of men of call-up age is of interest. In doing so, we must take into account not only males who were from 20 to 50 years of age before the war, but also those who came of age during the war and thus became subject

to mobilisation.[1] For this reason we took the number of males between 15 and 49.

The results of the calculation show that column five hardly differs from column four. This is understandable because the share of males in the total population is almost the same for every country.

The last indicator (number of killed and dead per 1,000 mobilised) characterises the degree of loss sustained by the armies of individual countries (see *Fig. 17*). In this respect Serbia, which lost almost 40 per cent of her Army, also holds first place. She is followed by other Balkan states (Rumania, Bulgaria and Turkey) which also lost from one-fifth to one-fourth of all their soldiers. Next comes France with losses of about 17 per cent of all mobilised. French colonial troops lost 16 per cent. Germany holds seventh place, having lost 15 per cent of her soldiers and officers.

These seven countries make up a group of states which suffered the biggest losses in the 1914-18 war in relation to their strength.

The second group includes eight countries, which lost from 9 to 15 per cent of their armies in killed and wounded: Australia, Great Britain, New Zealand, Austria-Hungary, Russia, Belgium, Italy and Canada.

The other five countries make up the third group, with losses of from 5 to 9 per cent of all mobilised, and in some cases even less.[2] Thus, U.S. losses amounted to only 2.6 per cent of its Army's strength, a relative loss of only one-fifteenth of that of the armies of Serbia and Montenegro and less than one-fifth that of the Russian Army.

The relative magnitude of losses by countries has been estimated in various studies. For example, in publica-

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[1] Döring in his second calculation, made a few years after the war and published in the *Handwörterbuch der Staatswissenschaften*, took the number of males between 20 and 45 years as the basis of his computation, thus presenting false picture of the degree of war losses.

[2] These are countries which, formally, did not take part in the war against Germany, but suffered some losses in the struggle against the German bloc. The losses of Japan are so insignificant (300 killed) that we did not take them into account.

tions of the International Labour Office the absolute magnitude of losses was calculated in percentages of the gainfully-occupied male population and the number of mobilised, although the criterion of the gainfully-occupied

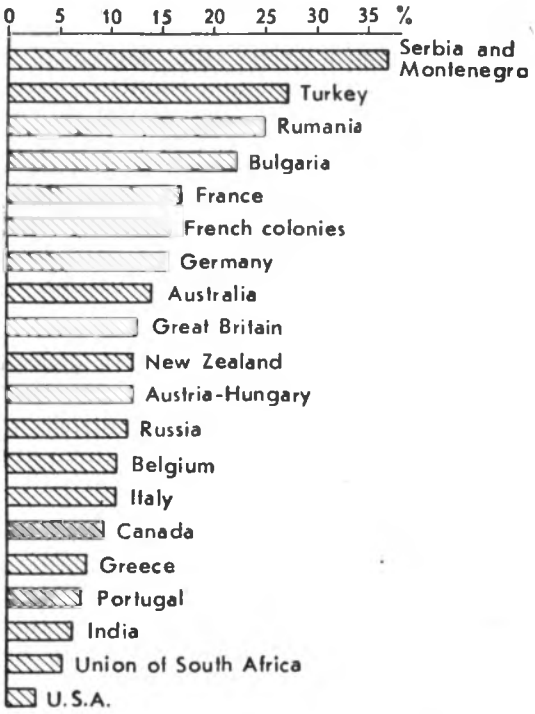

Fig 17. Share of Soldiers and Officers Who Perished in World War I in Total Number of Mobilised (by Countries)

male population can hardly be accepted. This concept is rather vague and, in various countries, is interpreted differently (chiefly owing to the question of whether the so-called helping members of the family should be included and of different age-groups). In our opinion, an indicator so unsuitable for international comparisons should not be

taken as a basis for complex calculations. Moreover, in many countries the necessary figures are lacking.

Of great interest is the size of losses as compared with the number of mobilised, but here too the figures are insufficiently exact. According to data obtained from the poll conducted by the International Labour Office, the losses of Austria-Hungary were bigger than Germany's. Yet it is a fact that the soldiers of the Austro-Hungarian Army preferred to surrender than to lay down their lives for Kaiser Wilhelm. As many as 1,736,000 soldiers of the Austro-Hungarian Army ended up in Russian captivity. The discrepancy is explained by the fact that in this poll total losses included not only killed but also missing. The number of the latter for Austria-Hungary was determined according to *Winkler*'s data, relating to the end of September 1918. At that time, the fate of many soldiers was not known and the number of missing amounted to 855,000, while the number of dead was 688,000 and prisoners 1,229,000. There is no doubt whatsoever that several hundred thousand missing were in Russian captivity, because the total number of prisoners and missing exceeded the figure of prisoners in Russian captivity by 500,000.

Döring also made an estimate of losses in relative terms by countries. His calculation, however, suffers from a number of basic shortcomings. First, it covers only ten countries. Russia, the United States, Serbia, Rumania, and some others were not included. Second, he based his calculations only on percentages of the population and per 1,000 males of the call-up age, but did not calculate per 1,000 mobilised. Third, he took a call-up age from only 20 to 45, thereby substantially increasing the share of losses among males, because many killed and dead were under 20. Fourth, he based his calculations on wrong data for Austro-Hungarian losses which led him to the conclusion that Hungary had the highest relative level of losses, while Austria was exceeded only by France.

The World War of 1914-18 was not only a war on land, but also on sea and in the air. It is of interest to separate Army losses from those for the Navy and the Air Force. Unfortunately, this cannot be done with any great precision since not all the countries provide the necessary data.

As regards losses on sea, the following information is available: Huber reports that among France's naval personnel 1,910 were killed in battles on land, 362 in naval battles, and 3,959 died in medical establishments, chiefly from the Spanish flu. In addition, 5,100 were missing of whom a considerable number drowned. He sets total losses for the French Navy at 11,000.[1]

As regards the British Navy, the figures vary. Some sources estimate losses at 32,000.[2] Vedel-Petersen cites more complete figures; 29,994 killed and died of wounds, and 11,788 died of other causes—altogether about 42,000. In Italy, according to the *Statesman's Yearbook* 3,169 people perished in the Navy. Russian naval losses (killed and dead) were 3,074.[3] U. S. naval losses are set at 7,367, according to data received from the War Department.[4] Thus, total naval losses for all countries in the anti-German bloc, amounted to 66,000.

The German Navy lost 34,354 men (according to more recent data from the *Sanitätsbericht*, 34,836, including 4,183 who died from disease, but excluding 4,804 missing[5]). Since most of the missing drowned, they should be included among the dead.

It is more difficult to ascertain Air Force losses. Exact data are available only for Germany: 5,105 killed, 6,155 wounded, and 2,476 missing. By adding the missing to the killed we estimate that in Germany 7,000 of the flying personnel perished in the war. If we include Austro-Hungarian losses, then some 8,000 pilots and other Air Force personnel perished in the countries of the German bloc.

France's casualties in the air are estimated at 8,255. According to other data, casualties totalled 6,158, including 1,815 killed.[6] If we include part of the missing, it may be considered that about 4,000 French pilots perished.

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[1] M. Huber, op. cit., p. 415.

[2] *Statistics of the Military Effort of the British Empire...*, for example, reports that 29,866 privates and 2,342 officers perished in the Navy (p. 399).

[3] *Rossiya v mirovoi voine...*, p. 36.

[4] W. F. Willcox, "Population and the World War", *Journal of the American Statistical Association* No. 142, 1923, p. 702.

[5] "Die Kriegsheere und ihre Verluste im Weltkrieg", *Wirtschaft und Statistik* No. 13/14, 1922, S. 488.

[6] *Sovetskaya voyennaya entsiklopediya*, Vol. 1, p. 95.

The losses of Britain's flying personnel in France from July 1916 to July 21, 1918, were 3,610 killed and missing.[1] Taking into account losses on other fronts, and losses in the period up to July 1916, we estimate the total number of British pilots killed at 4,000. U. S. air losses were insignificant, amounting to only 302 men. Italian and Russian losses are unknown, but, judging by the number of planes in service as compared with other countries, the number of dead pilots did not exceed 1,000-1,500. Air losses in all the Allied countries were approximately 10,000 men.

On this basis, the following table can be drawn up:

Losses on Land, Sea and in the Air During the 1914-18 War
(thousands)

Armed forces	Anti-German bloc	German bloc	Total
Land armies	5,337	3,982	9,319
Navy	66	39	105
Air Force	10	8	18
Total	5,413	4,029	9,442

Losses in the Navy amounted to slightly over one per cent of the total losses, even including losses among sailors who took part in land battles. Losses at sea constituted the smaller part of total naval losses.

In the 1914-18 war the air force was still in its infancy and losses in flying personnel were only 0.2 per cent of total losses. Almost 99 per cent of all losses were borne by the land armies.

* * *

World War I was thus the biggest of all preceding wars in the history of man. It was the direct result of the rivalry between the imperialist powers and occurred in an epoch when, as Lenin pointed out, "states, which possess a military apparatus expanded as a consequence of imperialist rivalry, have become military monsters which are

[1] Our estimates are based on *Statistics of the Military Effort of the British Empire...*, pp. 496, 504, 505.

exterminating millions of people in order to settle the issue as to whether Britain or Germany—this or that finance capital—is to rule the world". [1]

The First World War, which ended in the defeat of the German bloc, far from resolving the contradictions among the imperialist powers, created even sharper contradictions which ultimately led to fresh armed conflicts. As a result of the 1914-18 war, the centre of world capitalism shifted to the United States, which battened on the war.

The Treaty of Versailles did not bring Europe a lasting peace. German imperialism, revived by a golden shower of American dollars, was to spark off another conflagration 20 years later.

§ 3. Interwar Period

Civil War in the U.S.S.R. (1918-20). Summary losses in the Civil War (including the war against Poland) can be estimated approximately as follows: the number of killed on both sides exceeded 300,000. The number of dead from wounds can be set at one-sixth of the total number of killed, i.e., at 50,000. Disease claimed a toll of about 450,000 lives. Consequently, total losses were approximately *800,000*, [2] including Polish losses during their attack on Soviet Russia in 1920. [3]

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[1] V. I. Lenin, *Collected Works*, Vol. 25, p. 491.

[2] This number also includes Red Army servicemen who died in the rear.

[3] Academician S. G. Strumilin in his article "Russian Manpower Losses in the War" (*Narodnoye Khozyaistvo*, December 1920, p. 104) mentions losses of 5.3 million man-years. He proceeded from the premise that the death of a Red Army man in the war signified the loss of 31 man-years of work. On this basis we may estimate that 5.3 million man-years mean 170,000 killed and dead Red Army men. This figure is much smaller than our estimate for the following reasons: first, Strumilin calculated losses only up to July 1, 1920; second, he took losses for the Red Army only. However, even if we take into account these two factors, the difference between our estimates and Strumilin's remains considerable. Another estimate of civil war losses in Russia is given by Pitirim Sorokin (*Social and Cultural Dynamic*, Vol. III, p. 558). Claiming that there are no reliable statistics at all on this question, Sorokin resorts to some rather doubtful calculations. He holds that both armies totalled 700,000 men. Since the war lasted three years, Sorokin arrives at a figure of 2.1 million

Our estimate of Civil War losses needs verification This can be done by a comparison with local surveys. We mentioned earlier that two such surveys had been conducted in the Ukraine and the Don area. Here are the results of the survey in the Ukraine.

Human Losses in Rural Ukraine from 1914 to 1920 According to Data of a Special Survey *

Gubernia	Number of killed		Number of missing		Total killed and missing		Number of killed and missing in the Civil War per 100 killed and missing in the 1914—18 war
	in the 1914—18 war	in the Civil War	in the 1914—18 war	in the Civil War	in the 1914—18 war	in the Civil War	
Volhyn	75	19	50	16	125	35	28
Donets	217	265	120	308	337	573	170
Yekaterinoslav	454	194	245	136	699	330	47
Kiev	369	145	213	97	582	242	42
Odessa	164	40	81	39	245	79	32
Podolsk	194	41	139	40	333	81	24
Poltava	256	101	145	100	401	201	50
Kharkov	356	178	232	198	588	376	64
Chernigov	116	56	82	49	198	105	53
Total	2,201	1,039	1,307	983	3,508	2,022	58

* *Materialy o sotsialno-gigienicheskom sostoyanii ukrainskoi derevni* (Material on the Socio-Hygienic Condition of the Ukrainian Village), Kharkov, 1924, p. 35.

(roughly 2 million) soldier-years. Since there were 35 per cent losses in the Civil War, the same as he estimates for the 1914-18 war, Sorokin deduces that the losses of both sides were 700,000 men. We should like to make the following comments on these estimates. First, Sorokin is wrong in saying that there are no statistics on Civil War losses. Second, it is not at all clear what he includes in the term "losses". For all other wars he spoke about killed and wounded, but in the case of the Civil War in Russia he also included losses from disease, without indicating whether he meant lethal losses or something else.

Other foreign authors have also published wrong and utterly groundless figures on Civil War losses. For instance, S. N. Biraben of France, in his long article on the demographic evolution of the Soviet Union (S. N. Biraben, "Essai sur l'évolution démographique de l'URSS", *Population* No. 2 bis, June 1958, p. 38) points out that 1,200,000 men perished in the Red Army from 1918 to 1920. This figure is several times larger than the actual losses.

The last column in the table is the most important for determining Civil War losses. The figures in this column fluctuate substantially because the losses in the Civil War largely depended on the location of the fronts and centres of resistance. In the Donets Gubernia, for example, Civil War losses were even greater than losses in the 1914-18 war, while in the Podolsk Gubernia they were less than one-fourth of the losses in World War I. Taking the average for rural Ukraine, the number of killed and missing in the Civil War is 58 per cent of the number of killed and missing in the 1914-18 war. Since the participation of the Ukrainian population in the Civil War was more active than that of the population in the country as a whole, it may be assumed that total losses in the Civil War in Russia were less than 58 per cent of the losses in the 1914-18 war. Our estimate of 800,000 killed and dead amounts to 45 per cent of the losses in World War I. Thus, our figure of losses in the Civil War is to a certain extent confirmed by the survey made in the Ukraine.[1]

The survey of the Don area cannot be taken as a basis for analysing population losses in the Civil War since the area under survey was the centre of this war and therefore its losses can under no circumstances be applied to other areas. Actually, the "Quiet Don" was far from quiet in those years. The percentage of killed and missing in the Civil War was 3.72 as compared with 1.21 per cent in the 1914-18 war.[2] In other words, Civil War losses were three times higher than those in World War I, a ratio which indicates the importance of the Don area in the history of the Civil War.

In the *Graeco-Turkish War*, as pointed out earlier, Greek losses were 34,000 in killed and dead. Assuming that Turkish losses were similar we are left with total losses of *68,000 men.*

We estimated the number of killed in the *national-revolutionary war in Spain* at 300,000 soldiers and officers. The number of dead from disease among Franco's forces

[1] V. Mikhailovsky, a well-known statistician, mentions a figure of one million perished in the Civil War, including civilians, but he offers no data in justification of this estimate (*Trudy TsSU*, Vol. I, issue 3).

[2] A. Gozulov, op. cit., p. 185.

was 70,000, out of a total of 756,000 admissions to hospital.[1] The total number of dead in this war can be set at approximately *450,000* soldiers and officers. The figure of one million is often given as the total losses in the Spanish Civil War,[2] but probably it also includes civilians who perished as a result of fascist terror, starvation, disease, bombing, etc.

The total number of killed and dead in European wars between the First and Second World Wars exceeded 1.3 million people.[3]

§ 4. World War II

Lenin foresaw that the scale of World War II would greatly exceed the 1914-18 war. In his article "Fourth Anniversary of the October Revolution" he wrote that "the question of imperialist wars, of the international policy of finance capital which now dominates the whole world, a policy that must *inevitably* engender new imperialist wars, that must inevitably cause an extreme intensification of national oppression, pillage, brigandry and the strangulation of weak, backward and small nationalities by a handful of 'advanced' powers — that question has been the keystone of all policy in all the countries of the globe since 1914. It is a question of life and death for millions upon millions of people. It is a question of whether 20,000,000 people (as compared with the 10,000,000 who were killed in the war of 1914-18 and in the supplementary 'minor' wars that are still going on) are to be slaughtered in the next imperialist war, which the bourgeoisie are preparing, and which is growing out of capitalism before our very eyes. It is a question of whether in that future war, which is inevitable (if capitalism

[1] J. Villar Salinas, *Repercusiones demográficas de la última guerra civil española*, pp. 64-65.

[2] K. Duff, "Spain Between the Allies and the Axis", *The War and the Neutrals*, Oxford, 1956, p. 256.

[3] We added losses in the Civil War in Russia to the total for the period between the two world wars, although, strictly speaking, the Civil War began even before World War I ended.

continues to exist) 60,000,000 people are to be maimed (compared with the 30,000,000 maimed in 1914-18)".[1]

Even now, more than 25 years after the end of World War II, it is impossible to determine the exact losses of the armed forces of all belligerents. The most diverse and sharply differing figures have been quoted in the press.

The first calculation of the number of dead was given in the American *Statistical Bulletin of the Metropolitan Life Insurance Co.* The number of killed and dead from wounds during the Second World War was estimated at 9.5 million men.[2] However, American statistics must be regarded as greatly underestimated, even if we include several million soldiers and officers who perished in captivity and died from disease.

Other sources quote higher figures. In January 1946, the weekly *Der Weg* published in Berne, Switzerland, set World War II losses at 14,450,000. The statistical journal of the German Democratic Republic pointed out that in World War II 13 million soldiers and officers perished.[3]

These sources probably gave only killed and dead from wounds and did not include deaths from disease or in captivity. Two other figures come close to these estimates. For example, William Z. Foster stated that "total dead in this latest mass holocaust were 15,687,876 soldiers"[4]

General Marshall holds that 15 million soldiers and officers perished or were otherwise lost in World War II.[5]

Alongside the underestimated calculations, there are also figures that are far too high and distort the real picture. For example, *Florimond Bonte* in his book *German Militarism and France* points out that of the total number mobilised in World War II (110 million) 27 million, or about 24 per cent, were killed. A similar figure is quoted by Arntz (see *Balance of the Second World War*, p. 603).

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[1] V. I. Lenin, *Collected Works*, Vol. 33, p. 55.

[2] *Statistical Bulletin of the Metropolitan Life Insurance Co.* No. 1, 1946, pp. 5-8.

[3] *Statistisches Praxis*, H. 5, 1951.

[4] William Z. Foster, *Outline Political History of the Americas*, New York, 1951, p. 449.

[5] G. Bouthoul, *Les guerres*, Paris, 1951, p. 258.

It is difficult to name an exact figure of dead in World War II. Proceeding from various estimates and calculations, the total number of perished servicemen, including those killed in battle, dead from wounds, disease and accidents, and perished in captivity, may be set at about 22 million.[1] This figure is the basis of all our further calculations.

The number of perished soldiers and officers is broken down as follows:

	(thousands)		(thousands)
U. S. S. R.	10,000	Czechoslovakia	46
Germany	4,500	Canada	42
China	2,500	India	37
Japan	2,000	Australia	35
Italy	400	New Zealand, Union of South Africa, British colonies	31
U. S. A.	302	Albania	30
Yugoslavia	300	The Netherlands, Belgium, Luxemburg	29
Rumania	300	Bulgaria	10
Great Britain	290	Norway	3
Austria	270	Brazil	1
France	250	Denmark	0.4
Hungary	136		
Poland	123		
Greece	100		
Finland	84		

An idea of human losses in different services can be gained from the following data of the German forces:

Armed forces	German soldiers and officers killed and dead up to the end of 1944	
	thousands	per cent of total
Land armies	3,360	87.9
Navy	160	4.2
Air Force	303	7.9
Total	3,823	100.0

[1] The Vatican names the same figure, but evidently only for battle losses. See G. Bouthoul, op. cit., p. 258.

The role of the Navy and Air Force increased considerably during World War II. While in World War I the German Navy and Air Force accounted for only one per cent of the total losses, in World War II their share was 12 per cent. In other belligerent countries the share of naval and air losses was even higher. For example, in the United States, the Navy accounted for 20.1 per cent of all perished servicemen.

The difference in figures is understandable, first, because exact statistics are lacking for some belligerent countries and, second, because the range covered by various categories of losses differs. In some cases only killed are included, in others dead from all causes during the wars; still other sources include the civilian population and some authors make allowance for losses resulting from a decline in births, etc. As a result, widely differing figures for manpower losses in World War II are to be found.

Chapter III. LOSSES IN WARS WAGED BY EUROPEAN COUNTRIES OVER THE LAST THREE AND A HALF CENTURIES

§ 1. Total Losses

In our summary of losses in European wars over the last three and a half centuries, we are able to compare these losses by different periods. Let us present first a table with a grouping by periods which were taken as a basis of our exposition (see table on p. 223).

Even though this grouping by periods is not uniform, the table is of great interest. It shows that *in the last three and a half centuries, more than 40 million servicemen perished in European wars.* World War II in Europe, although covering only 1.7 per cent of this period, accounts for more than 40 per cent of the total killed and dead in wars over the past 350 years.

We have regrouped these data according to periods of the economic development of Europe.

War Losses in Europe from 1600 to 1945

Period	Years	Total number of killed and dead soldiers and officers during entire period (thousands)	Duration of period (years)	Average annual number of killed and dead (thousands)
17th century	1600—99	3,300	100	33
18th century	1700—1800 *	5,372	101	53
Period of Napoleonic wars	1801—15	3,457	15	230
From 1815 to World War I	1815—1914	2,217	99	22.4
World War I **	1914—18	9,059	4.25	2,132
Interval between two world wars	1918—39	1,336	21	64
World War II	1939—45	17,000	6	2,830

* Including 1800, the last year of the revolutionary wars.
** Excluding non-European countries, but including Turkey.

Number of War Victims in Europe According to Periods of Economic Development

Period	Years	Number of killed and dead soldiers and officers (millions)	Duration of the period (years)	Average annual number of killed and dead (thousands)
I. Pre-monopoly capitalism				
Crystallisation of the capitalist mode of production	1600—1699	3.3	100	33
	1700—1788	3.9	89	44
Industrial capitalism .	1789—1897	6.8	109	62
II. Imperialism	1898—1965	28	68	410

This table clearly reveals the huge scale of losses in the wars of the imperialist epoch. In the 17th and 18th centuries, when entire armies perished from epidemics of typhus, cholera and bubonic plague in a very brief period, the average annual number of killed and dead

ranged from 30,000 to 40,000. In the epoch of industrial capitalism, which included the cruel Napoleonic wars, the average number of killed and dead remained at almost the same level. But in the epoch of imperialism the average number of killed and dead increased ten times as compared with the 17th and 18th centuries.

In grouping the data by centuries the losses will be as follows:

War Losses in Europe by Centuries

Centuries	Number of killed and dead soldiers and officers (millions)	Number of years	Average number of killed and dead soldiers and officers (thousands)
17th	3.3	100	33
18th	5.2	100	52
19th	5.5	100	55
20th	28	70	400

The table shows that losses in 20th-century wars, through which imperialism sought to "resolve" its intrinsic contradictions at the sacrifice of millions of lives, were several times greater than the total for the preceding 300 years. The average annual number of soldiers and officers who perished in wars increased almost 8 times as compared with the 19th century (see *Fig. 18*).

Comparison of the Dynamics of Killed and Dead with the Dynamics of the Population

Period	Years	Average number of killed and dead soldiers and officers	Population in Europe
		17th century = 100	
I. Pre-monopoly capitalism			
Crystallisation of the capitalist mode of production	1600–1699	100	100
	1700–1788	133	132
Industrial capitalism .	1789–1897	188	253
II. Imperialism	1898–1965	1,360	425

This table shows that while the population increased by 325 per cent, war losses in the epoch of imperialism rose by 1,260 per cent. Thus, statistics and calculations show that wars in the imperialist epoch greatly exceed

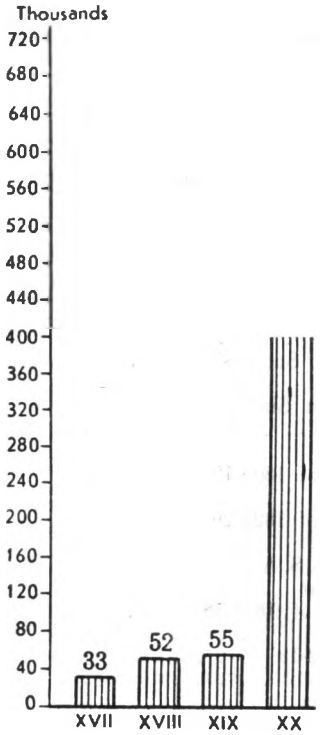

Fig. 18. Average Annual Number of Perished in Wars in Different Epochs

wars in earlier centuries in their destructive nature and total losses.

In conclusion let us compare losses in killed and dead in the biggest wars over the last three and a half centuries (the wars are given in chronological order; see table on p. 226 and *Fig. 19*).

Throughout its long history Europe has witnessed wars of varying duration. Some of them ended within one month after the outbreak of hostilities, but there were also wars which lasted for 30 and even 100 years. Nevertheless, not one of those wars which were accompanied by the strongest epidemics had losses that could be comparable to the toll in the wars in the epoch of imperialism.

Losses in the Biggest Wars

Wars	Number of killed and dead soldiers and officers (thousands)
Thirty Years' War	600
War of the Spanish Succession	700
Northern War	300
War of the Austrian Succession	450
Seven Years' War	550
Revolutionary wars	1,100
Russo-Turkish War of 1806-12	225
Napoleonic wars	3,105
Russo-Turkish War of 1828-29	205
Crimean War	309
Civil War in the U. S. A.	538
Franco-Prussian War	188
Russo-Turkish War of 1877-78	190
Russo-Japanese War	139
Balkan wars of 1912-13	224
World War I	9,442
Civil War in Russia	800
National-Revolutionary War in Spain (1936-39)	450
World War II	22,000

The given calculations show that the wars in the first half of the 20th century are many times greater for their death toll than the wars of preceding centuries.

The latest armaments (A and H bombs, missile and other weapons) would make another world war far more destructive and terrible even than World War II.

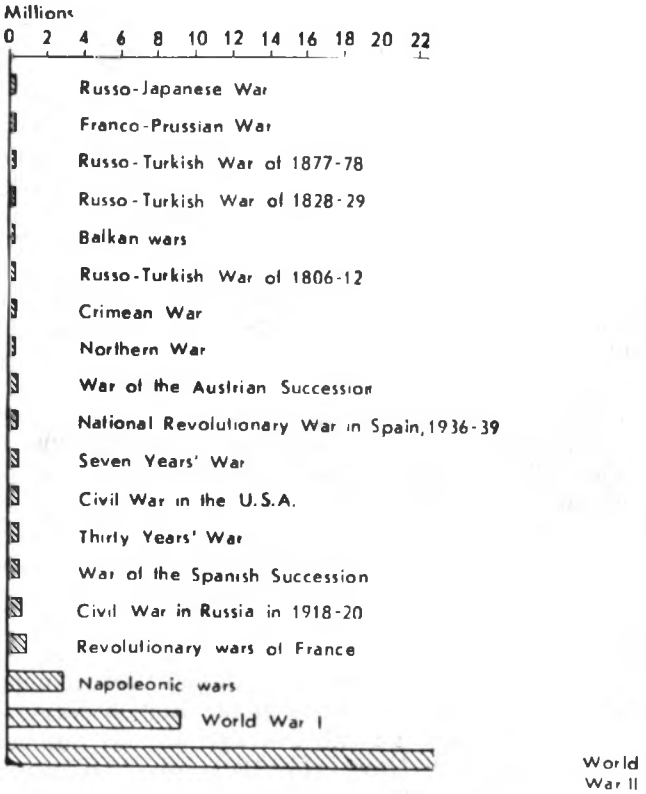

Fig. 19. Number of Soldiers and Officers Who Perished in the Biggest Wars.

§ 2. Net Military Losses

To gain an idea of the number of lives lost directly owing to wars, it is necessary on the basis of our computations of total losses to determine the scale of net war losses. If a war lasted only a few months, all losses can rightly be credited to that war. There should be no deductions made for mortality which would have happened without the war, since these deductions are so small as to be immaterial. But in cases when the war lasted

for years or even decades, a calculation of purely war losses is indispensable because it introduces essential corrections in the results.

The need to make adjustments for "normal" mortality in calculating war losses was realised long ago. As early as the beginning of the 19th century, *Count Garnier* in footnotes to his French translation of the works of Adam Smith, the renowned English economist, calculated the French losses over eight years of revolutionary wars. [1] He estimated the total number of killed and dead at 720,000. Proceeding from the strength of the army, on the one hand, and "normal" mortality of males between 20 and 40 years, on the other, he arrived at the conclusion that even without wars 45,000 soldiers and officers would have died annually; over eight years the total number of dead from natural causes would have been 360,000. Garnier deducted this figure from 720,000 and thus established that 360,000 deaths should be credited to war.

His calculation, however, was wrong; the figure he deducted was too big since he exaggerated normal mortality almost four times. What is of interest to us is the very fact that such calculations were made as far back as 1802.

Half a century later purely war losses were computed by *Hodge* in his work on losses of the British Navy from 1793 to 1815. He divided the average annual number of sailors in the British Navy (110,180) into two groups—regular sailors who would have served in the Navy had there been no war, and sailors specially recruited for war service. He then established the annual "mortality rate" for each group separately and by multiplying it by 20.45 (duration of the service in years) obtained the number who would have died during this period had there been no war. Here are his calculations. [2]

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[1] G. Garnier, *De ce que la guerre dernière a coûté à la population de la France*; A. Smith, *Recherches sur la nature et les causes de la richesse des nations*, t. V, Paris, 1802, p. 286.

[2] W. B. Hodge, "On the Mortality Arising from Naval Operations", *Journal of the Statistical Society of London*, Vol. 18, Part III, 1885, p. 213.

Number of sailors who would have died in peace time over 20.45 years of service in the Navy out of the 40,000 regular sailors, at a mortality rate of 16 per 1,000	13,088
Number of sailors who would have died in peace time over 20.45 war years out of the 70,180 men recruited for the Navy during the war, at a mortality rate of 10 per 1,000	14,352
Total	27,440
Total number of British sailors who died from disease and accidents during this period	72,102
Number of deaths caused by war	44,662

The mortality rate for regular sailors was established by Hodge on the basis of the reported mortality rate of sailors in peace time. The mortality rate for civilians who became sailors only in war time was taken by Hodge from British mortality tables published by Farr in 1844 for the age of 29, rightly assuming that had there been no war, all these people would have pursued their civilian occupations and be subject to the usual risk of death.

Methodologically, Hodge's calculation is basically right. As it happens, the adjustment is quite considerable: almost 40 per cent of all sailors who died from disease or accidents would have died without war, too.

In 1857, Hodge published his calculations of purely war losses for the British Army over the same period, in which he also applied various mortality rates for soldiers. He took the average strength of the Army at 189,500 men. In the absence of war, the Army's strength, Hodge assumed, would have dropped to 80,000. Consequently, 109,500 soldiers were in the Army solely because of the war. To them Hodge applied the mortality rate for males of 30 years (10 per 1,000). For the other 80,000 he took a mortality rate three times higher based on mortality of soldiers in the service in peace time. Soldiers who served within the country had a mortality rate only slightly higher than the mortality of civilian males of the same age (15.9 instead of 10 per 1,000). But soldiers who served

abroad had a much higher mortality rate (35.8 per 1,000). The average mortality was 29 per 1,000. Hodge rounded it off to 30. He then calculated the number of soldiers who would have died even if there had been no war and deducted this figure from the total number of killed and dead soldiers. As a result, the war losses during this period were reduced for the British Army from 219,420 to 139,035, [1] that is, by almost 40 per cent.

G. Lagneau of France made similar computations. [2] He calculated that from 1845 to 1862 the French Army declined by 356,428 men, while the average mortality was 28.28 per 1,000 soldiers. The normal mortality rate of Frenchmen from 20 to 30 years of age was 11.7 per 1,000. The difference in the two mortality rates must be credited to the influence of war and military service. Making a corresponding calculation, Lagneau found that 147,461 men would have died during this period even if there had been no war. From this he concluded that the difference between the two figures gives a loss of 208,967, which should be credited to war and military service, since military service, even in peace time, results in a higher mortality rate. But this mitigating factor, so carefully considered by Hodge, was neglected by Lagneau. As a result, his estimate of net war losses was somewhat exaggerated, because he gave them together with losses which followed from the need to maintain regular armies in peace time.

Calculation of purely war losses in World Wars I and II is of considerable importance. The 1914-18 war lasted four years and three months and more than 70 million men were mobilised during that time. It is clear that a considerable number would have died during these years even in the absence of war. This is easily demonstrated by material on the U. S. Army. Altogether 115,660 men in the American Army died from the moment war was declared to July 1, 1919; of this number 57,460 died of disease, 7,920 from various causes (including accidents) and

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[1] W. B. Hodge, "On the Mortality Arising from Military Operations", *The Assurance Magazine and Journal of the Institute of Actuaries*, Vol. 7, 1858, p. 165.

[2] G. Lagneau, op. cit., p. 484.

50,280 men were killed and died from wounds.[1] It would be wrong, however, to draw the conclusion that the American Army had such poor sanitary conditions that its losses from disease exceeded battle losses. Such a considerable number of deaths from disease is due to the large size of the American Army, part of which did not even come in contact with the enemy. Of the total number of sick, 36,050 died in America before even embarking for Europe.

Despite the importance of calculating net war losses, almost all who studied World War I neglected this factor and confined themselves to calculating total losses.

Only in computing losses of separate belligerent countries did some scholars take into account the so-called natural death. But the methodology of these calculations was not quite satisfactory. For example, in estimating Germany's losses, *Schwiening*[2] reasoned as follows: in 1905-10, an average of 1.1 million people died annually in Germany, including 571,000 males; 13 per cent of all deaths (75,000) were among males between 18 and 45. Schwiening takes this as the annual death rate of males of call-up ages. The number of dead and killed Germans, according to Schwiening's calculations was 1.8 million, or 415,000 per year of war. Deducting 75,000 from 415,000 Schwiening obtained net war losses of 340,000. But his computation is wrong. He, as it were, completely ignores the fact that not all males were called up. A considerable part were never in the armed forces. Moreover, many were demobilised because of sickness and disability. Schwiening's reasoning implies that during the war there was no mortality among civilian males from 18 to 45 years of age. This, naturally, was not the case and his calculation greatly exaggerates the normal mortality of the population.

Greenwood, a British statistician, made another computation.[3] Taking the strength of the British Army as

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[1] L. P. Ayres, op. cit., p. 123.

[2] Schwiening, "Sanitätsstatische Betrachtungen", *Die deutschen Ärzte im Weltkriege*, Berlin, 1920, S. 22.

[3] M. Greenwood, "British Loss of Life in the Wars of 1794-1815 and in 1914-1918", *Journal of the Royal Statistical Society*, Vol. 105, P. 1, 1942.

3.1 million men and that of the Navy as 280,000 men, and the "normal" mortality rate for 30-year old males according to British Mortality Table No. 8 (4.8 per 1,000), Greenwood estimated the number of people who would have died during those years had there been no war at 65,000. According to Greenwood, 772,000 men were killed and died in the British Army and Navy. Deducting 65,000 he reduced losses to 707,000, that is, by almost 9 per cent. For countries with a higher mortality rate this adjustment should be proportionately bigger.

Before undertaking definite computations of the purely war losses it is necessary to examine some methodological questions.

First, is it right to take as a basis the total number of mobilised? This seems incorrect to us, because mobilisation was gradual. Not all were mobilised at the beginning of the war and, consequently, for many soldiers their stay in the army was much shorter than the duration of the war. The only correct way is *to determine the total number of man-years* which all servicemen would have lived in war time had they not been mobilised. It is, of course, much harder to ascertain the number of man-years than the average annual strength of the army, inasmuch as it is necessary to know the distribution of the mobilised by mobilisation dates. Nevertheless, this number can be computed for some countries and with a certain approximation, for all other countries.

The second question concerns *statistics on mortality of servicemen in peace time.* A certain part of the army consists of professional officers and soldiers. Moreover, a part of the newly mobilised (chiefly the younger ages) would have been undergoing military service even if there had been no war. If army service involves a bigger risk of death, then the magnitude of the net war losses for this category will be determined by the difference between the probability of death during the war and the probability of death in military service in peace time. This difference will vary somewhat from the difference between the probability of death in war and the probability of death of an ordinary civilian. The more noticeable the difference, the more grounds there are for calculating the net losses for professional servicemen separately.

Even in the 19th century the mortality of soldiers serving in peace time was substantially higher than that of civilians. For example, between 1841 and 1852 the average mortality in the Russian Army was 37.4 per 1,000 of the personnel.[1] This mortality rate was much bigger than that of males of the same age among the civilian population. Subsequently, as a result of improved military medical services, this rate was noticeably reduced—to 18.7 between 1857 and 1861 and to 15.44 between 1862 and 1871. These mortality rates were then far closer to those of civilian males. According to Russian mortality tables computed by Bortkevich for the period of 1874-83, the mortality rate of males of 35 years of age was 11.29 per 1,000.

Thus, an adjustment for mortality among servicemen is of some importance for the 18th and 19th centuries, but can be overlooked for the 20th century.

Let us compute the pure losses for the 1914-18 war. In *Russia* 15.8 million men were mobilised. The war lasted approximately 3.5 years. Since mobilisation was gradual, by far not all the 15.8 million spent all these years in service. To determine the number of man-years it is necessary to ascertain the total number of mobilised at the beginning of each month. These monthly figures should then be summed up for the entire war. In Russia, up to December 1, 1917, it was 442 million man-months, or 37 million man-years. This is the total number of man-years which the mobilised spent from the moment of conscription up to the end of the war. From this number we have to deduct the man-years spent by former wounded on leave and the man-years attributable to war invalids. According to data from G.H.Q., there were 348,500 invalids dismissed from military service as of May 1, 1917. Proceeding from their discharge at regular intervals and taking 1915 as our starting-point, we may assume that on the average discharged invalids were out of military

[1] G. Gertsenstein, "War Losses of Life", *Voyenno-sanitarnoye delo* (Military Sanitation), 1882, p. 208. A. I. Radishchev, renowned Russian writer, pointed out that at the end of the 18th century mortality among soldiers in Russia was 4-5 per cent, while mortality of the rural population was 3 per cent (see *Polnoye sobraniye sochinenii* [Complete Works], Vol. III, 1952, pp. 108-09, 546-47).

service for a period of one and a half years. This gives us a total of about 500,000 man-years. It may be held that temporary demobilisation accounted for as many man-years. Thus, 36 million man-years remain.

The average age of the Russian soldier was 29 years. According to various Russian mortality tables, the mortality rate (q.) for 29-year-old males was as follows:

	Per 1,000
Bortkevich's mortality tables for 1874-83 . . .	9.42
Novoselsky's mortality tables for 1896-97	
1st variant	9.51
2nd variant	9.48
For 1907-10	
1st variant	9.45
2nd variant	9.44

It should be noted that the mortality table rates cannot be used for calculations of purely war losses since the healthiest males, whose probability of death is lower than of all males in the corresponding age-group, are drafted into the army. Unfortunately, we have no other data on the mortality rate by ages except these mortality tables. For this purpose use could also be made of insurance companies' data covering the insured part of the population. These data show that mortality rates for different ages differ considerably, depending on the groups of insured.

For example, in 1910, according to mortality tables of nine Russian insurance companies, persons aged 30 had the following mortality rates: insurance in case of death—7.45 per 1,000 and old-age insurance, 2.9.[1] Those who took out an old-age insurance policy were, in most cases, in better health and expected to live to collect the insurance themselves; their mortality rate was 60 per cent lower than of people of the same age who insured themselves against death.

That is why we consider it necessary to base our calculations on a death-rate lower than in the tables, so that they should properly characterise the level of mortality

[1] V. Gokhman, *Strakhovaniye zhizni* (Life Insurance), Moscow, 1944, p. 45.

of the mobilised part of the male population. The extent to which this rate should be lowered depends on the share of the mobilised among the total male population of the corresponding ages. If this share is not big, it means that the healthiest males of the various ages were conscripted into the army. The mortality rate for this category of males will differ considerably from the mortality rate for all males of the same age. As the share of mobilised rises, the difference will decline and will gradually be reduced to nought with a 100 per cent mobilisation.

There is a definite relation between the ratio of the number of all males and the number of mobilised, on the one hand, and the ratio of mortality rates, on the other:

$$\frac{\text{number of all males}}{\text{number of mobilised men}} = f\left(\frac{\text{mortality rate of non-mobilised}}{\text{mortality rate of mobilised}}\right)$$

Without delving into theoretical reasons, let us limit ourselves to the statement that, on the basis of empirical material and logical considerations, we can estimate that the ratio in the number of the two categories of men approximately equals the square of the ratios of mortality rates of the non-mobilised and mobilised men.

$$\frac{\text{number of all males}}{\text{number of mobilised men}} = \left(\frac{\text{mortality rate of non-mobilised}}{\text{mortality rate of mobilised}}\right)^2$$

Taking this empirical ratio as a basis, we can adjust it for the state of health of the mobilised men.

Designating the mortality rate of the mobilised by x, of the non-mobilised by y and of both by z, and the respective size of the groups by a and b, we get:

$$ax + by = (a + b)\,z$$

$$\left(\begin{array}{c}\text{number of dead}\\ \text{mobilised}\end{array} + \begin{array}{c}\text{number of dead}\\ \text{non-mobilised}\end{array} = \begin{array}{c}\text{total number of}\\ \text{dead males}\end{array}\right).$$

Quantities a, b and z are known and only x and y are unknown. Empirically, the ratio between them can be presented algebraically as follows:

$$\frac{a+b}{a} = \left(\frac{y}{x}\right)^2,$$

whence

$$y^2 = x^2\left(\frac{a+b}{a}\right)$$

and, consequently,

$$y = x\sqrt{\frac{a+b}{a}}.$$

Having established the magnitude of y we substitute it in the above equation

$$ax + bx\sqrt{\frac{a+b}{a}} = (a+b)z.$$

In this equation there is only one unknown quantity, x, which will be equal to the following:

$$x = \frac{(a+b)z}{a+b\sqrt{\frac{a+b}{a}}}.$$

It is easy to see from this formula that the smaller the quantity b as compared with a (i.e., the higher the share of the mobilised men) the smaller the difference between the mortality rate of the mobilised and the general mortality rate of males. In the case of total mobilisation (i.e., when $b=0$) the expression $\sqrt{\frac{a+b}{a}}$ will be equal to 1 and the entire fraction will be equal to z.

Let us demonstrate the use of this formula in the case of *Russia*. There were altogether 40 million males between 15 and 49 years, of whom about 16 million (a) were mobilised and 24 million (b) were not mobilised. The mortality rate of males was 9.4 per 1,000. These three quantities are sufficient to ascertain the mortality rate of the mobilised men. It will equal:

$$x = \frac{(16+24)\cdot 9.4}{16+24\sqrt{\frac{16+24}{16}}} = \frac{376}{16+24\cdot 1.6} = \frac{376}{55} \approx 7.$$

The total number of man-years spent by the mobilised in the Russian Army was estimated earlier at 36 million. Applying the mortality rate for mobilised men established above (7 per 1,000 annually) to the 36 million man-years, we obtain the figure of 252,000. This means that had the entire mass of the mobilised not been drafted into the army, 252,000 men would have died from various diseases, accidents and other causes over a period equal to the

duration of the war. It is this figure that should be deducted from the total number of killed and dead during the war:

$$1{,}811{,}000 - 252{,}000 = 1{,}559{,}000$$

Thus, adjustment for normal mortality of the mobilised reduces the losses by 14 per cent. The magnitude of the adjustment is quite substantial. Yet it is usually not taken into consideration. Only the statistician *S. Kohn*,[1] made an estimate of normal mortality, according to which 150,000 would have died in peace-time conditions as well. But in his computation the average annual strength of the army was underestimated.

Let us also mention the calculations of Academician *Strumilin*[2] who made an adjustment of 13 per cent for the natural mortality of Russian soldiers during the 1914-17 war. In absolute figures this correction reduced Russia's losses from 975,000 to 847,000, that is, by 128,000 (almost half of our adjustment). This difference arose chiefly because Strumilin took a lower figure of losses as a basis. Incidentally, he himself makes the reservation that the number of killed and dead was estimated on the basis of "quite incomplete data".

Let us stress that the number who died from disease in the army should not be compared with the total number of man-years of all mobilised. The man-years served by all killed, all those who died from wounds and all war prisoners should be deducted. The remaining figure gives the men among whom there were many cases of death from sickness. The total number of man-years spent by the mobilised at war has been estimated earlier at 36 million. The number of killed, dead from wounds and war prisoners was about 4.5 million. Considering that each perished and each prisoner spent an average of a year and a half in the army or in captivity we get a figure of 6.8 million man-years. Deducting this figure from the total we obtain 29 million man-years. Applying the mortality rate of 7 per 1,000 we find that 203,000 soldiers and

[1] S. Kohn and A. P. Meyendorff, *The Cost of the War to Russia*, New Haven, 1932, p. 138.

[2] S. Strumilin, op. cit., pp. 104-06.

officers were liable to die from disease during military service. The actual number of men who died from disease was evidently close to this figure. This shows that in World War I the Russian Army was medically in a relatively satisfactory condition, particularly when compared with the high level of mortality among the civilian population in tsarist Russia.

For *France* the total number of man-years served by the mobilised is determined as follows:

Number of Man-Years Spent by the Mobilised in the French Army *

Duration of stay in the army (years)	Number of soldiers (millions)	Man-years (millions)
4	5.8	23.20
3.5	0.9	3.15
2.25	0.5	1.13
1.5	0.4	0.60
0.5	0.3	0.15
Total	7.9	28.23

* Table is compiled on the basis of Huber's data (M. Huber, op. cit., p. 90).

The number of man-years of invalids should be deducted from the total. There were 278,000 invalids as of January 1, 1916, 444,000 on January 1, 1917, and 588,000 [1] on January 1, 1918. Summing up these figures, rounding them off and taking into account the number of invalids in 1915, we obtain a figure of 1.5 million man-years. Deducting this from the total we are left with 26.7 million man-years. The average age of the French soldier was approximately 30 years; q_{30}, according to the French mortality table of 1920-23, was 6.5. Taking into account the health of the mobilised we find, according to the formula given earlier, that $q_{30} = 6.3$ per thousand. Consequently, in peace-time conditions, 26.7 million man-years would have produced 168,000 deaths. Total French losses amounted to 1,327,000 and hence purely war losses were 1,159,000,

[1] M. Huber, op. cit., p. 439.

that is, 13 per cent less than the total. An adjustment for normal mortality in the case of France was somewhat smaller than that for Russia due to the fact that the number of mobilised in Russia was twice as large, while the number of killed and dead was only slightly bigger than in France.

British World War I statistics give the number of man-days spent in military service by British soldiers and officers. Soldiers spent 3,055 million man-days and officers 114 million, a total of 3,169 million man-days.[1] Dividing this figure by 365 days we obtain 8.7 million man-years.

The mortality rate for 30-year-old males was 4.8 per 1,000, according to the British mortality table of 1911-12. With an adjustment for the health of the mobilised, it is 4 per 1,000. This yields a figure of 35,000 men who would have died had there been no war. Hence, the purely war losses for Britain were 680,000.

For *Italy* the rate of transfer of the number of mobilised into man-years should be not more than 2, since Italy entered the war 10 months after it began. Hence the total number of man-years was 11.2 million. With a mortality rate of 6.3 and an adjustment for the health of the mobilised of 6 per 1,000, the total number of males who would have died in peace time is estimated at 67,000.

For the *U.S.* Army there is detailed information about the deployment of the U.S. expeditionary forces in France. The sum of monthly data on U.S. army strength in Europe in 1917-18 gives a figure of 10.22 million man-months, i.e., 0.85 million man-years. The wounded spent 17 million man-days and the sick 27 million in hospitals, a total of 44 million man-days or 120,000 man-years. The total number of man-years in the American expeditionary corps was 0.97 million. With a mortality rate of 4 per 1,000, 4,000 men would have died in peace time. Actually, 21,000 died from disease alone. This considerable number is explained chiefly by the influenza epidemic which hit the American forces in France at the end of 1918.

In our estimates of the hypothetical number of deaths in the other countries of the anti-German bloc, we took

[1] *Statistics of the Military Effort of the British Empire...*, p. 439.

into account the strength of the army and the duration of the war.

In *Germany* 13.2 million men were mobilised. Taking an average of 2.5 years, we obtain a figure of 33 million man-years. According to German mortality tables for 1910-11 the q_{30} was 5.1; since the healthier males are mobilised, the mortality rate is reduced to 5. As a result we get a figure of 165,000 who would have died during these years in peace-time conditions.

For other countries we have calculated only approximate figures of hypothetical losses. The results of all these computations are presented in the following table:

Net War Losses in 1914-18 by Countries

(thousands)

Countries	Total losses	Hypothetical number of deaths in peace-time conditions	Net war losses
Anti-German Bloc			
Russia	1,811	252	1,559
France	1,327	168	1,159
Great Britain	715	35	680
Italy	578	67	511
U. S. A.	71 *	4	67
Serbia and Montenegro	278	(20)	258
Rumania	250	(10)	240
British dominions and India	198	(30)	168
Other countries	142	(10)	132
Total	5,370	596	4,774
German Bloc			
Germany	2,037	165	1,872
Austria-Hungary	1,100	(100)	1,000
Turkey	804	(50)	754
Bulgaria	88	(6)	82
Total	4,029	321	3,708
Grand total	9,399	917	8,482

* Losses of expeditionary forces only.

Thus, the hypothetical number of dead was 900,000 and consequently net war losses totalled 8.5 million men.

An adjustment for the mortality of professional soldiers will have hardly any effect on the total. If for one-tenth of all the mobilised we take a mortality rate 30 per cent higher than usual, the average mortality of all mobilised will increase by 3 per cent. The absolute magnitude of the normal mortality of all mobilised will rise accordingly. Since the hypothetical number of deaths in the 1914-18 war is one-ninth of the net war losses, an adjustment of 3 per cent would shrink to 0.3 per cent as regards the total magnitude of losses. For this reason it can be discounted.

There is no point in calculating the net war losses between 1815 and 1914 since there were almost no wars of long duration in this period. But for the period of the Napoleonic wars, the adjustment for natural death is considerable. If we proceed from the figures on the French Army given by *Lagneau*, the number of man-years spent by the mobilised in the army will be 19.7 million. Applying the mortality rate established by *Duvillard* for that period (12.85 per 1,000 males between the ages of 20 and 40), [1] we find that 253,000 soldiers in Napoleon's army [2] should have died between 1804 and 1815 from various diseases and other causes even without being conscripted. Thus, the net war losses of Napoleon's army amounted to 950,000 men, while total losses were 1,200,000.

Unfortunately we have insufficient data on 17th and 18th century armies to ascertain the number of man-years the soldiers spent at war, and we are thus forced to limit ourselves to rough estimates.

Bearing in mind that, on the one hand, wars in these centuries were of long duration and, on the other, the mortality of the civilian population was high, we arrive at the conclusion that the adjustment for natural death should be approximately 15 per cent of the total losses.

Summing up these computations we find:

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[1] Duvillard, *Sur la mortalité en France pour dix millions d'habitants*, Paris, t. III, p. 398; Quoted after G. Lagneau, op. cit., p. 465.

[2] Not including armies of Napoleon's allies.

Total and Net War Losses in European Wars by Centuries

Century	Total losses (millions)	Adjustment for natural deaths (millions)	Net war losses (millions)	Average annual net war losses (thousands)
17th	3.3	0.5	2.8	28
18th	5.2	0.8	4.4	44
19th	5.5	1.0	4.5	45
20th	28	2.0 *	26.0	370

* An approximate figure, because there are no data on man-years served in World War II. For armies of non-European states and for civilian population the adjustment was not calculated.

The table shows that net war losses in the first 60 years of our century greatly exceed the losses for the three preceding centuries combined.

Let us examine the share of net war losses among other causes of the death of males. In the mid-17th century Europe had a population of 105.8 million people.[1] Taking into account the birth-rate of 40 per 1,000 and the ratio of 106 boys to 100 girls we find that in the 17th century about 220 million boys were born. In view of the high level of child mortality, it may be held that only 40 per cent of the total number of born, or approximately 88 million, reached the age of 20. The number who perished at war (excluding normal mortality) was estimated by us at 2.8 million. Thus, in the 17th century 3.2 per cent of all adult males perished in battle or died from wounds and disease in the course of war. By the same method we have calculated the figures for the 18th, 19th and 20th centuries (see table on top of next page).

The table shows that in the 17th, 18th and 19th centuries from 2 to 4 per cent of all adult males perished in the war, while in the 20th century the losses accounted for almost 10 per cent.

Let us mention a similar computation made by *Q. Wright*,[2] an American sociologist.

[1] See our book *Rost naseleniya v Yevrope* (Growth of Population in Europe), p. 205.

[2] Q. Wright, *A Study of War*, Vol. I, Chicago, 1942, p. 678.

Share of Males Who Perished in Wars Between the 17th and 20th Centuries *

Century	Males who reached the age of 20	Direct war losses among servicemen (net losses)	Percentage of males who reached the age of 20 and perished at war
	(millions)		
17th	88	2.8	3.2
18th	116	4.4	3.8
19th	251	4.5	1.8
20th	300	26.0	8.7

* The number of males who reached the age of 20 was estimated by us at 40 per 100 births in the 17th and 18th centuries, 50 in the 19th century and 65 in the 20th century. These estimates are based on mortality tables for different periods in various European countries. The birth rates taken were as follows: 17th and 18th centuries, 40 per 1,000; 19th century, 38; for the 19th century an adjustment of 10 million was made for emigration.

Attaching great importance to statistical analysis in the study of wars, Wright determines the share of dead due to wars in Europe in the 17th and 20th centuries. For the 17th century he deduces a figure of 2 per cent and for the 20th century of 3 per cent, that is, an increase of only 50 per cent. His figures sharply differ from our computations. In view of this, it is necessary to examine the methods by which Wright arrived at his figures.

Wright begins by counting, according to Bodart's dictionary, the number of dead and wounded for France and Britain separately in the 17th, 18th and 19th centuries. Then, to ascertain the number of killed and dead from wounds, he takes one-fourth of the obtained results and arrives at the following figures:

Number of Killed and Dead from Wounds

Century	France	Britain
17th	67,339	22,612
18th	178,267	31,429
19th	252,287	27,322

Having computed these figures, Wright himself immediately becomes convinced that they are wrong. "These figures, however, are much too low. Dumas ... and Bodart himself present figures suggesting that French Army losses in the nineteenth century were over 2,500,000 and

British Army losses during that century were 300,000, or ten times the estimates above. These estimates include army losses from disease and from minor engagements not listed among Bodart's battles. If we apply this factor to Bodart's figures for the preceding century, and take World War I losses from Bogart and estimate death rates on the supposition that in Western Europe they have halved in the last three centuries, we get the result indicated in table...."[1]

Let us examine Wright's methodology. To begin with, Bodart nowhere gives the figure of 2.5 million of which Wright speaks. He mentions losses of 1,000,000 men in the Napoleonic wars and 1,000,000 over the next 100 years. This makes a maximum of 2 million men for the 19th century and consequently Wright's figures are exaggerated eight times over and not ten times. Moreover, Dumas nowhere gives the figure of 300,000 for British losses in the 19th century as claimed by Wright. We can only surmise that Wright obtained it by adding together the figures of losses on land and on sea for the period from 1792 to 1815. However, it remains a mystery why Wright considers this period as representing the 19th century as a whole.

Moreover, it is absolutely incomprehensible how Wright, relying on chance figures for the 19th century, could come to the conclusion that his calculations, according to Bodart's dictionary for the 17th and 18th century, should be multiplied by no less than a factor of ten to obtain the number of dead in wars. The proportion accidentally and, moreover, wrongly set for the 19th century is automatically applied to two preceding centuries. As a result of this "method" Wright arrives at the following figures of killed and dead in war:

Number of Dead and Killed in Wars in France and Britain According to Wright's Calculations

(thousands)

Century	France	Britain
17th	673	226
18th	1,783	314
19th	2,522	273
20th	1,427	807

[1] Ibid., pp. 243-44.

Needless to say, any relation that these figures bear to reality is pure chance and their scientific value is nil. Yet, Wright takes them as a basis for further computations. He divides them by 100 (for the 20th century by 25) and obtains the average annual number of dead. Furthermore, taking definite mortality rates and the average size of population, he estimates the average number of dead in the country. Finally, he finds the percentage of dead in wars from the total number of dead. All his calculations are presented in the following table:

Share of Dead in Wars in Relation to Total Number of Dead
(Wright's calculations)

Century	Average annual number of killed and dead in war	Average size of population (millions)	Mortality rate per 1,000	Total number of dead annually (thousands)	Share of dead in wars to total number of dead (per cent)
			France		
17th	6,730	18.5	34	629	1.1
18th	17,830	22	30	660	2.7
19th	25,220	34	25	850	3.0
20th	42,810	40	17	680	6.3
			Britain		
17th	3,260	5	30	150	1.5
18th	3,140	8	28	224	1.4
19th	2,730	22	22	484	0.6
20th	24,210	42	12	504	4.8

Thus, the share of dead in wars increased in France from 1.1 to 6.3 per cent, that is, almost six times, and in Britain more than three times. Wright says that corresponding computations for other European powers have not been made, but there is reason to assume that the same tendency holds true there as well.

Wright points to the death of civilians from hostilities, not counting starvation and epidemics which he singles out separately, and ventures that the percentage of dead in wars in Britain and in France is somewhat higher than the European average. "Taking all factors into

consideration," Wright says, "the proportion of deaths attributable to military service and to hostilities has probably increased among European countries from about 2 per cent in the 17th century to about 3 per cent in the 20th century." [1] Elsewhere in the book these two and three per cent figure in the table of the causes of death in the 17th and 20th centuries.

These 2 and 3 per cent clearly have a very hazy statistical origin. It is absolutely incomprehensible how Wright, on the basis of his own data which show an increase in the number of dead in France of six times and in Britain of three times, arrives at the conclusion that on the average the number of dead in wars for Europe as a whole increased only 50 per cent.

It is similarly incomprehensible how Wright could take 2 per cent as an average for 17th-century Europe, a level higher than that for Britain and France, when he himself writes that the "military service losses of France and England were probably above the general average for European countries in both centuries," [2] that is, judging from the context, apparently in the 17th and 18th centuries.

Thus we arrive at the conclusion that the figures of 2 and 3 per cent given by Wright for military losses are merely his personal estimate which, moreover, diverges from the material he himself quoted earlier.

In reality, war losses increased many times more than Wright claims. That the figure of 2 per cent which he gives for "military service losses" is wrong is fully revealed if we compare this figure with another figure given by the same author. Elsewhere Wright points out that in 17th-century Europe approximately 0.3 per cent of the population were under arms. [3] Thus, according to Wright, the number of killed and dead "in wars" was almost seven times greater than the strength of the army. [4]

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[1] Q. Wright, op. cit., p. 245.
[2] Ibid., p. 244.
[3] Ibid., p. 232.
[4] The death of civilians in war time was caused chiefly by starvation and epidemics, both of which are disregarded in these computations.

In conclusion let us note that in general it is not quite right to compare the number of killed and dead soldiers with the total number of dead in a country. The share of killed soldiers can increase merely as a result of the drop in child mortality. It is a fact that in the case of high child mortality, more than 50 per cent of all the dead are children under one year. It is clear that if we take the total number of dead and compare it with a stable number of killed and dead soldiers, the mere drop in the share of children up to one year old among the dead as a result of a drop in child mortality will increase the share of "deaths due to war". Moreover, the weight of this share is distorted by the inclusion of women and children. Therefore, we maintain that the number of killed and dead soldiers should be compared not with the total number of dead, but with the number of males who reach the age of 20, as has been done in our computations.

PART V. INFLUENCE OF WAR ON POPULATION DYNAMICS

In previous chapters we examined the losses of armed forces during a war. However, it is not only soldiers and officers who perish in a war. Therefore it is necessary to give an idea of the scale of losses suffered by the civilian population in war time, determine the total losses and analyse the consequences of these wars.

Chapter I. THE EFFECT OF WARS ON BIRTHS

It is not difficult to trace the effect of wars on the birth level if population statistics are available and the country's territory has not been occupied. A mere comparison of the total number of births prior to the war, in war time and after the war affords a graphic picture of any changes in the number of births which should be ascribed to the impact of war. In this case the principle *post hoc, ergo proptes hoc* is fully applicable. War is such a disruptive event in the life of the people that all demographic changes in war time are usually attributable to it and not to the influence of any other factors. [1]

[1] In using absolute figures covering a number of years (for example, a decade) account should also be taken of the population growth during this period. For example, A. Quetelet cites data on the number of births in Belgium and the Netherlands from 1804 to 1813 and from 1815 to 1824 to demonstrate the effect of the Napoleonic wars. But the increase in the number of births by 14 per cent in the decade after the Napoleonic wars does not give an idea of their influence since the absolute size of population also grew during this period. (See A. Quetelet, *Physique sociale.*)

In addition to absolute figures, the birth level is also characterised by the birth-rate. But in this case the question arises whether the denominator should represent the entire population or whether servicemen should be deducted. Usually war leads to a decline in population. If the number of births remains stable, the birth-rate will go up, giving a wrong picture of birth dynamics. A drop in the number of births in war time, reducing the total size of the population, will also tend to raise the birth-rate. Therefore, the birth-rate can be used for a geographic comparison. But to analyse the impact of war on birth

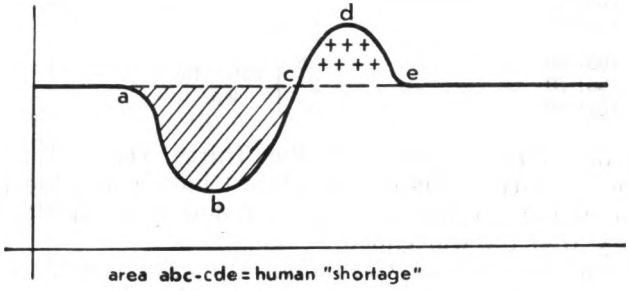

Fig. 20. Layout of Human "Shortage"

dynamics, it is preferable to take the absolute number of births.

Moreover, the actual number of births should be compared with corresponding hypothetical data, i.e., the number which would have been in the absence of war. The difference between the actual and hypothetical figures determines the degree of the war's impact on the number of births. By adding the losses in births over all the war years we obtain the human "shortage" caused by the war.

After the war a compensatory wave usually occurs, i.e., the birth level rises above the usual figure. Therefore, for a proper ascertainment of the human "shortage" it is necessary to deduct from it the extra number of births occurring in the post-war years. This can be illustrated by the drawing given above (see *Fig. 20*):

* * *

The influence of wars on the birth level was considerable even in the past. Unfortunately statistical data is available only from the Thirty Years' War. For example, according to available information on several German communities in the principality of Hohenloe, the average annual number of births changed as follows [1]:

Years	Number of births		Average
1604-10	37	prior to the war	38
1611-20	39		
1621-27	32	war period	27
1632-40	22		
1641-50	29		
1651-60	28	after the war	30
1661-70	27		
1671-80	37		

In the hardest period of the Thirty Years' War, the number of births was cut by almost half, while the restoration of the pre-war level occurred only a quarter of a century after the war ended.

In another part of Germany, Altmark, a reduction of births was also observed during that period. According to *Kaphan*'s data covering 33 villages devastated by the Thirty Years' War, the drop was so large that even in post-war years the average number of births was 25 per cent below the pre-war period. [2]

In the next century, the Seven Years' War exerted a noticeable impact on demographic processes in Europe. Its effect on births was noted by a contemporary of that war, *Johann Süssmilch*, the eminent German demographer. Determining the average number of children per 10 marriages, he established that during the Seven Years' War there was a noticeable decline in births in Germany. Thus, during the war, an average of 34 children per ten marriages were born in 40 German villages, while between

[1] Roesle, "Die Wirkung des 30-Jährigen Krieges auf die Entwicklung einer ländlichen Bevölkerung", Archiv für *Soziale Hygiene und Demographie*, 1932, Bd. 7, No. 3, S. 213.

[2] See Kaphan, *Die Wirtschaftlichen Folgen des 30 Jährigen Krieges*, t. d. Altmark, 1911, S. 80.

1768 and 1774, i.e., from 5 to 13 years after the war, an average of 43 children per ten marriages were born—an increase of one-third. In the town of Lebus, 40 children were born per 10 marriages as compared to the war-time figure of 33. In Salzwedens there were 35 births per 10 marriages during the war and 41 after it. "In most cases," Süssmilch wrote, "I separated the war years from the other years to show how war and the high cost of living lead to a decline in marriage fertility."[1] The statistical data cited by Süssmilch refute the assertion of *Gaston Bodart*, noted French historian, that the Thirty Years' War was the only case of war adversely affecting births.[2] As we shall subsequently prove, later wars exerted a similar influence.

The Russo-Swedish War of 1741-43 was the first in which one of the belligerents kept statistics of the natural movement of population. In Norway, which at that time was part of Sweden, the birth-rate was as follows[3]:

Years	Birth-rate	
1739	30.9	before the war
1740	29.6	
1741	27.1	war period
1742	26.3	
1743	28.5	
1744	30.1	after the war

The war years show a decline in the birth level of about 10 per cent. From this it is clear that this war also affected the growth of population.

Almost half a century later, the Russo-Swedish War of 1788-90, the third in the 18th century, was fought. At that time both Sweden and Finland, which was then part of Sweden, kept statistics of the population movement. The dynamics of the birth-rate in the belligerent countries was as follows[4]:

[1] J. P. Süssmilch, *Die Göttliche Ordnung in den Veränderungen des Menschlichen Geschlechts aus der Geburt, dem Tode und der Fortpflanzung desselben*, Berlin, 1776, Bd. III, S. 106.

[2] G. Bodart, Losses of Life in Modern Wars, Oxford, 1916, p. 16.

[3] P. I. Kurkin, *Rozhdayemost i smertnost v kapitalisticheskikh gosudarstvakh Yevropy* (Births and Mortality in European Capitalist Countries), Moscow, 1938, p. 14.

[4] Ibid.

Years	Norway	Sweden	Finland	
1787	29.3	31.5	40.4	before the war
1788	30.8	33.9	36.1	
1789	30.7	32.0	34.2	war period
1790	32.1	30.5	37.0	
1791	32.7	32.6	36.0	after the war

The influence of war was most noticeable in Finland where the birth-rate in 1789 declined by 15 per cent. In Sweden and Norway, however, the drop was insignificant.

In the 19th century, the influence of war on births was far more tangible.

Here are figures pertaining to the period of the Napoleonic wars[1] (see next page).

These data show that the effect of the Napoleonic wars on births was not as considerable as might have been expected. It should be borne in mind that from 1805 to 1811 Russia was also at war with Turkey. The number of births in Russia declined noticeably only in 1813 when the rate was nearly 10 per cent lower than in 1811. This was the influence of the Patriotic War of 1812. After the rout of Napoleon, the number of births in Russia swiftly mounted and in 1816 it was 40 per cent greater than in 1813.

In France, the impact of the Napoleonic wars, if we are to judge by the number of births, was even less noticeable than in Russia. During all these years there was no really big decline in births, even during years of intensive fighting and large-scale mobilisation. Napoleon evidently had reason for saying that one night in Paris would replenish his battalions! Nevertheless, the birth-rate during the war years was 6-7 per cent lower than in the years preceding the Napoleonic wars. The influence of Napoleon's

[1] For Russia only the Orthodox Christian population was taken into account. See V. I. Pokrovsky "The Influence of Fluctuations of Crops and Grain Prices on the Natural Movement of the Population" in the collection *Vliyaniye urozhayev i khlebnykh tsen na nekotoriye storony russkogo narodnogo khozyaistva* (The Influence of Crops and Grain Prices on Some Aspects of the Russian Economy), St. Petersburg, 1897, Vol. 2, p. 185.

Number of Births
(thousands)

Years	France **	Russia	Birth-rate in France **
1801	903	1,179	33.1
1802	918	1,294	33.4
1803	919	1,277	33.0
1804	907	1,358	32.7
1805	912	1,361	34.0
1806	916	1,346	31.5
1807	925	1,335	31.6
1808	912	1,334	31.1
1809	933	1,321	31.6
1810	931	1,375	31.4
1811	926	1,341	31.0
1812	883	1,264	29.4
1813	895	1,099	29.9
1814	994	1,228	33.4
1815	953	1,337	32.2
1816	968	1,492	33.1

** See Emile Levasseur, *La Population Française*, Paris, 1891, t. II, p. 6 For 1801-05 the figures cover a period from October of the preceding year to September of the given year.

Russian campaign was more noticeable. In 1812, the birth level dropped by 5 per cent as compared with the preceding year, but in 1814 it rose by 10 per cent. The comparatively small changes in births are explained by the fact that the birth level throughout the Napoleonic wars was evidently substantially lower than in the preceding period. At the close of the 18th century (the end of the reign of Louis XVI) the birth-rate in France fluctuated from 37 to 39,[1] while during Napoleon's reign it did not exceed 30-34.

Subsequent wars in Europe were no longer so bloody, only a small part of the male population was mobilised and their effect on the birth level was not considerable. This, for example, is corroborated by figures pertaining to the period of the Crimean War.

[1] Emile Levasseur, op. cit., p. 10.

Years	Number of births in Russia (thousands)*	Birth-rate	
		France	Britain
1852	2,491	26.8	34.2
1853	2,672	26.0	33.3
1854	2,558	25.5	34.1
1855	2,483	25.0	33.7
1856	2,406	26.3	34.4

* Only for the Orthodox Christian population.

In Russia the number of births in 1856 was almost 4 per cent below the figure at the beginning of the war. In France, which actively participated in the Crimean War, the birth-rate also declined by approximately 4 per cent during these years. In Britain the war years had no effect on births.

The impact of the Austro-Prussian War of 1866 on births was also negligible. In 1867 the birth-rate in Austria and Germany was only 3 per cent lower than in the preceding year.

The influence of the Franco-Prussian War of 1870-71 was more pronounced.

Years	Birth-rate	
	France	Germany
1869	26.0	38.0
1870	25.9	38.7
1871	22.9	34.5
1872	26.7	39.5

In 1871, when the events of the preceding year were felt, the level of births fell in both countries. In France there were 944,000 births in 1870. In Germany the number of births dropped from 1,636,000 to 1,473,000, i.e., by 10 per cent.

Subsequent wars also had an insignificant influence on births. For example, during the Russo-Turkish War of

1877-78, the number of births in Russia declined by 4 per cent and during the Russo-Japanese War of 1904-05 by 6 per cent. It should be noted that in Japan the birth-rate also dropped by 6 per cent during this war.

The impact of all these wars on the birth level can in no way be compared to that exerted by World War I.

Whereas in 17th- and 18th-centuries wars the numerical strength of the armed forces was measured in hundreds of thousands and in 19th-century wars in millions, in the 1914-18 war it reached tens of millions. This led to a rupture of existing family ties and a decline in the number of marriages with a consequent sharp fall in births. Its extent can be judged by the following table:

Birth-Rate *

Years	Russia — R. S. F. S. R.	Germany	France	Britain	Italy	Austria
1913	47.0	27.5	18.2	24.1	31.7	29.7
1914	46.9	26.8	17.9	23.8	31.1	24.0
1915	39.7	20.4	11.6	21.8	30.5	18.5
1916	29.9	15.2	9.5	21.0	24.0	14.8
1917	23.9	13.9	10.5	17.8	19.5	13.9
1918	32.0	14.3	12.2	17.7	18.1	14.1
1919	31.0	20.0	12.6	18.5	21.4	18.5
1920	31.2	25.9	21.3	25.5	31.8	22.7

Years	Hungary	Bulgaria	Czechoslovakia	Belgium	U. S. A.
1913	34.5	25.7 **	29.3	22.5	—
1914	32.7	35.1	28.5	20.4	—
1915	23.8	40.2	20.6	16.1	25.1
1916	16.6	21.3	15.0	12.9	25.0
1917	15.8	17.2	13.7	11.3	24.7
1918	15.3	21.2	12.9	11.2	24.6
1919	27.6	32.8	22.4	16.3	22.3
1920	31.4	39.9	26.6	21.9	23.7

* For Russia — R. S. F. S. R. see B. Urlanis, *Rozhdayemost i prodolzhitelnost zhizni v SSSR* (Births and Life Expectancy in the U. S. S. R.), Moscow, 1963, pp. 21 and 25; for Germany, K. Witthaner, *Die Bevölkerung der Erde*, Gotha, 1958, S. 184; for France, M. Huber, *La population de la France pendant la guerre*, Paris 1931, p. 261; for other countries, Kurkin, op. cit.

** The low birth-rate is explained by the influence of the 1912-13 Balkan wars in which Bulgaria participated.

Births declined sharply in all belligerent countries, but the degree of the drop differed greatly. Births fell more than half in Hungary, Czechoslovakia and Bulgaria and by nearly half in Germany, Russia, France, Belgium, Austria and Italy. The decline was less considerable in Britain (25 per cent) and still smaller (10 per cent) in the United States which entered the war only in 1917.

The biggest drop in births was registered at different times for different countries: in France it was in 1916; in Russia, Germany, Austria and Bulgaria in 1917; in Britain, Italy, Hungary, Czechoslovakia and Belgium in 1918 and in the United States in 1919. The increase of the birth-rate in France in 1917 is explained by the bigger number of soldiers' leaves. In Russia, the year 1917 was a reflection of 1916 when the situation sharply deteriorated both at the front and in the rear.

Some neutral countries also "reacted" to the war of 1914-18. The rumble of guns from the Alps evidently reached as far as Switzerland where the birth-rate dropped from 23.2 in 1913 to 18.5 in 1917.

A strong compensatory wave of births swept over all countries after the war. In the defeated countries the birth-rate, though it increased, did not attain the pre-war level, while in the victorious countries it rose in 1920 even above the 1914 level (in Britain by 8 per cent, France 25 per cent, Italy 2 per cent and Belgium 7 per cent). This wave also reached the neutral countries: in Norway the birth-rate in 1920 was 15 per cent higher than in 1914, in Sweden 19 per cent, Switzerland 24 per cent, and in Spain 6 per cent. Thus, the population of neutral countries reacted to the end of hostilities once the immediate danger of being plunged into the imperialist blood bath disappeared.

The drop in births during World War I drove a serious breach in the age composition of the population and led to a human "shortage". For Western Europe it was expressed in the following figures [1]:

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[1] See B. Urlanis, *Rost naseleniya v Yevrope* (Growth of Population in Europe), p. 273.

(thousands)

Years	Actual number of births	Hypothetical number of births	Difference
1914	9,684	9,900	−216
1915	8,075	9,800	−1,725
1916	6,425	9,700	−3,275
1917	5,893	9,600	−3,707
1918	5,992	9,500	−3,508
1919	7,252	9,400	−2,148
1920	9,490	9,300	+190
		Total	−14,389

The total human "shortage" caused by the war in Western Europe alone exceeded 14 million people. It was also considerable in Russia. [1]

(millions)

Years	Actual number of births	Hypothetical number of births	Difference
1914	7.6	—	—
1915	6.5	7.5	−1.0
1916	4.9	7.5	−2.6
1917	3.9	7.5	−3.6
		Total	−7.2

According to our calculations, the human "shortage" in Russia in absolute figures was half the size of that for the whole of Western Europe. [2] As for the total "shortage" resulting from the 1914-18 war, it was approximately 22 million people.

[1] See B. Urlanis, "Dynamics of Russia's Population on the Eve of the October Revolution", *Uchoniye zapiski kafedry statistiki VZEI* (Papers of the Department of Statistics of the U.S.S.R. Correspondence Economics Institute), p. 123.

[2] According to A. Boyarsky and N. Shusherin (Demograficheskaya statistika [Demographic Statistics], 1955, p. 140), the human "shortage" was even greater (9-10 million). S. Novoselsky (*Trudy komissii...*, p. 110) gives a lower estimate (6.5 million).

The Civil War, which raged in Soviet Russia from 1918 to 1920, also greatly influenced the birth level in the country. While in the West European countries the pre-war birth level was surpassed in 1920, this was not the case in Soviet Russia. Although by that time the birth-rate had risen as compared with 1916-17, it was one-third below the pre-war mark. The birth-rate in the U.S.S.R. was restored only in 1924-25.

After the end of the Civil War in Soviet Russia, Europe knew a period of relative peace, interrupted for a short time by the Graeco-Turkish War of 1919-22. However, in 1939, German imperialism once again unleashed world war whose flames enveloped almost the entire globe.

But the influence of World War II on the birth-rate was somewhat different to that of World War I, as can be seen from the following figures:

Dynamics of the Birth-Rate During World War II in Countries of the Hitlerite Coalition

Years	Germany *	Italy	Austria	Finland	Hungary	Rumania	Japan
1939	20.4	23.6	20.7	21.2	19.4	28.3	26.6
1940	20.1	23.5	21.8	17.8	20.0	26.5	29.4
1941	18.6	20.9	20.1	24.2	19.0	23.0	31.1
1942	14.9	20.5	17.1	16.6	19.9	21.4	30.3
1943	16.0	19.9	18.0	20.5	18.4	23.4	30.3
1944	15.3	18.3	18.6	21.3	20.7	21.7	29.2
1945	12.8	18.3	14.9	25.5	18.7	19.6	23.2
1946	14.4	23.0	15.9	27.9	18.7	23.8	25.3

* For Germany the figures for 1944-46 were obtained as follows: In 1950-55, the population in the G. D. R. and in the F. R. G. born in 1944 was 3 per cent higher than those born in 1943. On these grounds it may be assumed that in 1944 the number of births was 4 per cent higher than in 1943. The birth-rate for 1946 was calculated as the average weighted of the figures for West Germany (16.4), East Germany (10.4) and Berlin (7.3). The number of births in 1945 was one-seventh smaller than in 1946. By correspondingly reducing the 1946 birth-rate we obtain the birth-rate for 1945.

The birth dynamics in countries of the Hitlerite coalition was quite different. The war against Poland and the West exerted none of its adverse influences on the level of births. The war against the Soviet Union, the effect of which was felt only from 1942 on, caused in that year a decline in the birth-rate of more than 20 per cent.

Next year, the birth-rate increased somewhat but in subsequent years it again declined. In 1945 it was nearly 40 per cent below the pre-war level and only in 1946 did it begin to rise slowly, although not regaining the pre-war level.

The dynamics of births shaped differently in Italy where, although the birth-rate declined annually throughout the war, the degree of the drop was half of that of Germany. Thus by 1945 the birth-rate was only 20 per cent lower than in 1939.

Up to 1945 the birth-rate hardly declined in Japan, Hitler's Asian ally. Only in 1945, the year when Japanese imperialism was defeated, did the birth-rate suddenly drop 20 per cent as compared with 1944.

In Austria, Finland and Rumania, as in Germany, there was a certain, though not very substantial, increase in births in 1943.

The dynamics of births was different in countries of the anti-Hitlerite coalition.

Dynamics of the Birth-Rate in Certain Countries of the Anti-Hitlerite Coalition

Years	France	Great Britain	Belgium	Netherlands	U. S. A.	Canada
1939	14.7	15.2	15.2	20.6	17.3	20.4
1940	13.8	14.6	13.6	20.8	17.9	21.5
1941	13.1	14.4	12.2	20.3	18.8	22.2
1942	14.5	15.9	13.2	21.0	20.8	23.4
1943	15.8	16.6	15.0	23.0	21.5	24.1
1944	16.3	17.9	15.3	24.0	20.2	23.8
1945	16.6	16.2	15.7	22.6	19.5	24.0
1946	20.9	19.4	18.3	30.2	23.3	27.0

The dynamics of births was somewhat peculiar in France: in 1941 the birth-rate dropped by 11 per cent as compared with the pre-war level, but in 1942 it began to rise systematically. This is explained by the fact that after the defeat in 1940 France actually withdrew from the war and only the Resistance forces continued to fight the German invaders. The rise in births was especially big in 1946, after the victory over nazism. The birth-rate in that year was almost 50 per cent above the pre-war level

The picture was somewhat different in Britain. During the initial period of the war there was a certain decrease in births (5 per cent), but during the second period the birth level began to increase noticeably. To a certain extent this was due to the fact that during this period the main brunt of the war against Germany was shouldered by the Soviet Union, thus sharply reducing the war burden for Britain. In 1945, there was a small decline in births, possibly due to the opening of the Second Front.

In Yugoslavia the birth level declined from year to year during the war and reached its lowest mark in 1945: the number of births in that year was approximately one-third below the pre-war figure. [1]

In the United States there was an increase in births in the first war years. This process slowed down somewhat in 1944-45 but was resumed after the war.

The end of the war brought about a sharp rise in births. This can be judged by comparing the birth-rate in 1946 and 1945.

Victor countries	Increase of birth-rate in 1946 as compared with 1945, per cent
France	26
Great Britain	20
Belgium	17
Netherlands	34
U. S. A.	20
Canada	13
Average	22
Defeated countries	
Germany	4
Italy	26
Austria	7
Finland	10
Hungary	0
Rumania	22
Japan	9
Average	10

[1] This estimate is based on data of the age composition of Yugoslavia's population according to the post-war census. See *Demografska Statistika, 1961,* Beograd, 1964, str. 24.

Thus, in the countries which suffered defeat the rise in births after the end of the war was half of that in the victorious countries. The post-war baby boom in the victorious countries is clearly seen from the following diagram (*Fig. 21*).

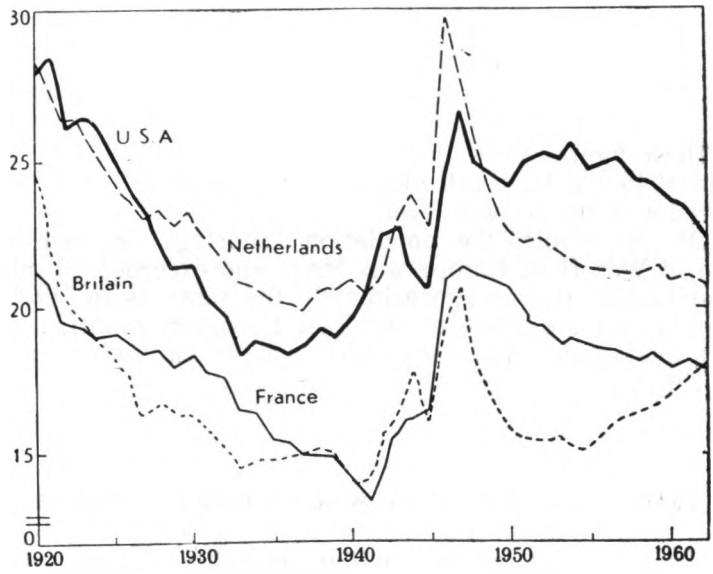

Fig. 21. Post-war Baby Boom. Birth-Rate in 1920-1962

In the Soviet Union the birth level dropped sharply during the war as can be judged by the number of pupils in the first four forms from 1950 to 1954.

School year	Date of birth of pupils	Number of pupils (millions)
1949/50	September 1, 1938 to September 1, 1942	22.6
1950/51	September 1, 1939 to September 1, 1943	19.7
1951/52	September 1, 1940 to September 1, 1944	16.4
1952/53	September 1, 1941 to September 1, 1945	13.4
1953/54	September 1, 1942 to September 1, 1946	12.1

The number of pupils born in 1942-46 dropped by almost half as compared with the number of pupils born from 1938 to 1942. This shows that the birth-rate in war time was cut by more than half. The decrease in births in the U. S. S. R. during the war is also shown by the following data for the Armenian Soviet Socialist Republic:

Years	Birth-rate	Years	Birth-rate
1936	43.6	1946—50	29.3
1941—45	23.0	1951—55	36.9

These figures show that in the five years between 1941 and 1945 the birth-rate dropped by almost half as compared with the pre-war level.

On the whole, the population "shortage" caused by World War II in Europe was large and exceeded 20 million people. It was approximately the same as in World War I, but the share of the East European countries in the total population "shortage" was much higher than in 1914-18.

Chapter II. THE EFFECT OF WAR ON CIVILIAN MORTALITY

The impact of war on civilian mortality is manifested above all in the higher mortality of children, aged and sick. But in war time perfectly healthy people are frequently the victims of premature death owing to an increase in the number of industrial accidents, poor food, exhausting work, etc. For this reason it is very difficult to determine war-time "excess mortality". The death-rate in war years often distorts the real picture, greatly minimising the influence of war. A drop in the number of newly born infants leads to a decline in the share of the population with a higher death-rate. This brings about a drop in the general death-rate, although the mortality for certain age-groups usually rises in war time. Therefore, in analysing the dynamics of death-rates and the number of deaths, all these factors should be taken into account.

The effect of war on civilian mortality in the 18th century can be traced only in the case of Sweden during the Russo-Swedish War of 1788-90. [1]

Years	Death-rate	Years	Death-rate
1787	24.0	1790	30.4
1788	26.7	1791	25.5
1789	33.1		

These figures show that even then war inflicted considerable losses on the civilian population. In 1789, the death-rate in Sweden was 30 per cent above the pre-war level. Such a rise cannot be ascribed to the influence of unfavourable weather conditions because the grain harvest during those years was not below average. [2]

The influence of the Napoleonic wars on mortality can be judged from the following figures [3]:

Years	Death-rate in France	Number of deaths in Russia *	Number of deaths in France
		thousands	
1805	31.1	818	833
1806	26.9	845	781
1807	27.4	866	803
1808	26.4	892	773
1809	25.4	849	748
1810	24.6	904	730
1811	25.6	967	766
1812	25.6	973	769
1813	25.9	1,102	774
1814	29.3	838	872
1815	25.8	894	762

* Only for the Orthodox Christian population.

In France mortality rose noticeably only in 1814 (15 per cent as compared with the preceding year) and the rest

[1] G. Sundbärg, *Bevölkerungsstatistik Schwedes* 1750-1900, Stockholm, 1907, S. 60.

[2] Ibid., S. 20.

[3] For France see Levasseur, op. cit., p. 7.

of the time there was no rise in mortality. Russia's worst year was 1813 when the aftermath of the devastation inflicted by the Napoleonic invasion was fully felt.

The years of the Crimean War were characterised by the following figures:

Years	Death-rate in France	Number of deaths in Russia (thousands)
1852	22.6	1,739
1853	22.0	2,095
1854	27.4	1,908
1855	26.0	2,249
1856	23.1	1,223

Russia was far more affected by the Crimean War than her enemies; the number of deaths in 1855 was 30 per cent higher than in the last pre-war year (1852). However, it should be borne in mind that almost half the increase in the number of deaths was due to the cholera epidemic in 1855 from which 131,000 people died. In France the war years were also marked by higher mortality.

In the Austro-Prussian-Danish War of 1864, mortality among the civilian population of Denmark rose substantially. [1]

Year	Number of deaths (thousands)	Death-rate
1862	30.2	18.4
1863	30.3	18.3
1864	39.1	23.3
1865	39.3	23.2
1866	35.7	20.9

In Denmark the number of deaths during the war and the first post-war year was almost one-third higher than before the war.

During the Austro-Prussian War of 1866 mortality among the civilian population of Austria was one-third higher than in 1865 but this increase is due to the cholera

[1] S. Dumas and K. O. Vedel-Petersen, *Losses of Life Caused by War*, Oxford, 1923, p. 119.

epidemic, whose outbreak cannot be directly linked with the hostilities.

The influence of the Franco-Prussian War was noticeable only in France.

Number of deaths * (thousands)

Year	France	Germany
1868	922	1,173
1869	864	1,154
1870	1,047	1,184
1871	1,271	1,272
1872	793	1,261

* French and German statistics apparently include among the dead part of the men who perished in the war, which somewhat reduces the figure of "excess mortality".

The year 1871 when France was defeated witnessed a sharp increase in the number of deaths. "Excess mortality" among the civilian population as opposed to the peace-time rate was estimated at from 300,000 to 400,000. An important factor causing higher mortality among the civilian population was the siege of Paris. Prior to the siege 65,633 people died in 65 weeks, that is, approximately 1,000 a week, whilst during the 26 weeks of siege 73,000 people died, or approximately 2,800 a week. In this case the "excess mortality" due to war was thus 47,000 deaths per half-year". [1]

A certain increase in mortality also occurred in Germany, where "excess mortality" amounted to approximately 200,000 men in 1871-72. True, half of these people perished from a smallpox epidemic but this does not reduce the losses of the civilian population as a result of the war; moreover the epidemic was carried to Prussia by French prisoners of war and was thus a direct consequence of the war.

The Russo-Turkish War of 1877-78 also caused higher mortality among the civilian population. In Russia the number of deaths in 1878 rose by 300,000 as against 1877 and by 400,000 as compared with 1875.

[1] S. Dumas and K. O. Vedel-Petersen, op. cit., p. 121.

However, all 19th-century wars were nothing as compared to the toll exacted by World War I.

Undernourishment and the sudden worsening of living conditions sharply increased mortality among the civilian population.

In the case of Russia, it is impossible to establish exact data on the influence of the 1914-17 war, first, because part of the country was occupied by the Germans and, secondly, because of incomplete statistics on the natural movement of the population. Nevertheless, certain calculations can be made on the basis of incomplete data. In 1915, the number of deaths increased by 69,000 in 41 gubernias of European Russia. Moreover, the number of births dropped by 675,000.

Similar calculations for 1916 and 1917 reveal a further increase of mortality among civilians. Since births dropped and child mortality was high, it will be more correct to consider not the death-rate for the entire population but the death-rate for the entire population above the age of one. This rate, according to our calculations, was as follows during the World War I [1]:

Year	Death-rate in Russia for the population above one year
1914	18.4
1915	21.0
1916	22.0
1917	22.3

These calculations show that as a result of war-time privations the number of deaths among the civilian population of Russia exceeded the pre-war level by approximately 1.5 million. Thus, for each man who perished at the front, approximately one person died in the rear.

Other countries also suffered a higher mortality rate during World War I. [2]

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[1] B. Urlanis, "Dynamics of Russia's Population on the Eve of the October Revolution", *Uchoniye zapiski VZEI*, Moscow, 1957, p. 134.

[2] The table is compiled on the basis of *Handwörterbuch der Staatswiessenschaften*, Band II, S. 729.

Countries	Death-rate						
	1908–1913	1914	1915	1916	1917	1918	1919
German Bloc							
Germany	16.5	19.0	21.4	19.2	20.5	24.7	15.5
Austria	21.5	18.1	21.4	21.0	23.0	26.5	20.5
Hungary	24.6	23.5	25.2	21.0	20.7	25.9	19.6
Anti-German Bloc							
France	18.2	18.9	18.0	17.1	17.6	24.0	19.3
England and Wales	14.1	14.0	15.9	14.7	14.8	18.3	13.7
Italy	20.4	17.9	20.2	19.6	19.2	33.0	19.0
Belgium	15.7 *	14.1	13.4	13.5	16.7	21.2	14.9
Neutral Countries							
The Netherlands	13.9 **	12.4	12.5	12.9	13.1	17.1	13.2
Switzerland	15.2	13.8	13.3	13.0	13.7	19.4	14.2

* For 1909—12.
** For 1906—13.

In view of the sharp drop in the number of births, the death-rate considerably understates the level of mortality in war time. Even so, mortality in Germany, for example, was noticeably above the pre-war level. Mortality was similarly high in Austria in 1917. In countries of the anti-German bloc there was a small rise in the death-rate between 1914 and 1917. In Britain, despite the blockade and all the efforts of the German Navy to sink ships carrying food, there were no serious food difficulties and the death-rate in 1916 and 1917 was only 5 per cent above the pre-war figure. However, the dynamics of the death-rate does not give us a full idea of the population shrinkage in war time. Calculations, based on absolute figures and the birth level, reveal a considerable excess mortality among the civilian population during the war. This is estimated as follows for the European belligerents [1]:

[1] The table is drawn up on the basis of the following sources: L. Hersch, *La mortalité causée par la guerre mondiale*, Metron, 1927, V. 7, No. 1, p. 81; S. Dumas and K. O. Vedel-Petersen, op. cit.,

Entente countries	Thousands
Russia *	1,500
France	500
Great Britain	292
Italy	1,021
Belgium	92
Portugal	220
Serbia	450
Rumania	430
Greece	150
Total	4,655

Countries of the German bloc	Thousands
Germany	692
Austria-Hungary	700
Turkey	—
Bulgaria	100
Total	1,492 (excluding Turkey)

* We did not include 1918 because Russia withdrew from the war at the end of 1917.

Thus, excluding Turkey for which there is no data at all, more than 6 million civilians perished in Europe as a result of higher mortality during the war.

Mortality was especially high in the last year of the war. People, exhausted by the long drawn-out war, were struck by a terrible epidemic of Spanish flu. The death-rate leapt up. In Western Europe alone the number of deaths in 1918 was 2 million higher than in 1917, chiefly because of this epidemic.

The Spanish flu epidemic was rightly called a pandemy because it embraced almost the entire globe. It is held that more than 500 million people were sick, of whom 20 million died.

All these losses, in our opinion, should be added to the total human losses caused by World War I. Had there been no war there would most probably have been no pandemy. But, even if it had occurred, the death toll, would probably have been much lower.

Hardly had World War I ended than the imperialist powers launched a campaign against the young Soviet Republic. Armed intervention and the Civil War inflicted tremendous losses on the peoples of Soviet Russia and famine and epidemics caused by the war and the intervention sharply raised mortality.

p. 174; *Aperçu annuel de la demographie de divers pays du monde*, 1922; *Atlas obyvatelstwa C.S.S.R.*, 1962, str. 37. The calculations for Russia, Austria-Hungary and Bulgaria were made by us.

Year	Death-rate *	Year	Death-rate *
1914	27.2	1919	46.7
1918	44.2	1920	43.3

* A. Boyarsky, "On the Natural Movement of the Population in Russia and in the U.S.S.R. from 1915 to 1923", *Uchonlye zapiski moskovskogo ekonomo-statisticheskogo instituta* (Annals of the Moscow Economics and Statistics Institute), Vol. I, Moscow, 1948, p. 66.

From 1918 to 1920 mortality was nearly two-thirds above the pre-war level. In addition to the famine and the flu epidemic, a large toll was also claimed by the typhus epidemic, carried all over the country by soldiers demobilised from the tsarist army. The famine and the epidemics among civilians, caused by the intervention, the blockade and the Civil War, claimed 8 million lives.[1]

World War II likewise inflicted huge losses on the civilian population. These losses were partly reflected in the dynamics of the death-rate.

Death-Rate in Countries of the Anti-Hitlerite Coalition

Years	Great Britain	France	Belgium	Netherlands	Norway	U.S.A.
1938	11.8	15.8	13.2	8.5	9.9	10.6
1939	12.2	15.6	13.9	8.6	10.1	10.6
1940	14.4	18.9	16.2	9.9	10.9	10.7
1941	13.7	17.3	14.7	10.0	10.8	10.5
1942	12.4	16.9	14.8	9.5	10.7	10.3
1943	13.1	16.3	13.6	10.0	10.4	10.9
1944	12.8	19.2	16.0	11.8	10.7	10.6
1945	12.7	16.3	14.9	15.3	9.7	10.6
1946	12.1	13.6	13.6	8.5	9.4	10.0

In 1940, the first war year, mortality rose substantially in Britain, France, Belgium and the Netherlands. The next year mortality somewhat decreased, but remained above the pre-war level. In 1944 there was a sharp rise in mortality in France and Belgium which had again become the

[1] A. Boyarsky (op. cit., p. 67) estimates excess mortality in 1915-20 at 10 million people. By deducting 2 million for 1915-17, we obtain the figure of 8 million.

arena of hostilities. In 1946, the death-rate in these countries returned to the initial level.

Some countries were particularly hard hit by the war. The population of Greece, for example, was subjected to incredible privation and suffering. The Italo-German invaders destroyed the country's economy and doomed the people to starvation and extinction. In August 1941, the food ration was 60 gr. of bread a day and 12 gr. of sugar a month. In October 1941, the bread ration was cut to 40 gr. Starvation and epidemics of typhus, dysentery, diphtheria and cholera raged all over Greece. In Athens, ninety out of each hundred newborn infants died. At the end of November 1941, about 800 deaths were registered daily in Athens and Piraeus. Altogether 320,000 deaths were registered in Greece from August 1941 to March 1942 (see the London *Times* of April 15, 1942). This number was five times higher than the country's normal mortality rate. Starvation in Greece reached staggering proportions. The price of a loaf of rye bread was equivalent to that of a house and the emaciated, half-starved population fed on roots and dry leaves. The nazis hampered the delivery of food by neutral countries. For example, a freighter chartered by the Swedish Red Cross which was bringing in a few thousand tons of grain to Greece was sunk by German planes.

As a result of starvation and epidemics from 500,000 to 600,000 civilians died in Greece. [1]

People in other nazi-occupied countries also suffered from hunger. In Norway, for example, the daily ration was 150 gr. of bread with an admixture of chaff and cellulose. Scurvy swept the country and for months the population had no vegetables, potatoes, or fish.

In non-European countries of the anti-Hitlerite coalition there was no rise in civilian mortality during the war. The civilian population of these countries (United States, Canada, Australia and New Zealand) did not suffer the horrors of war, and their losses were limited to a relatively small toll levied on their armed forces.

In countries of the Hitlerite bloc the death-rate was as follows:

[1] *Economic and Social Atlas of Greece*, Athens, 1964, p. 204.

Years	Germany	Austria	Hungary	Italy	Rumania	Japan
1938	11.7	14.0	14.3	14.1	19.2	17.7
1939	12.3	15.3	13.5	13.4	18.6	17.8
1940	12.7	14.8	14.3	13.6	19.1	16.4
1941	12.1	14.0	13.2	13.9	19.3	15.7
1942	12.0	13.3	14.6	14.3	19.5	15.8
1943	12.1	13.8	13.5	15.2	18.1	16.3
1944	...	16.0	...	15.3	19.6	17.4
1945	...	25.6	23.4	13.6	20.0	29.2
1946	15.6 *	13.4	15.0	12.1	18.9	17.6

* Calculated as a weighted average on the basis of available data.

As long as the nazis were advancing, the death-rate in these countries practically did not react to the war. Even in 1943, that is, after the Battle of Stalingrad, the death-rate in Germany and Austria remained at the previous level. However, in 1944 the living conditions of the population in countries of the Hitlerite bloc took a sudden turn for the worse. Unfortunately, there are no statistics for Germany for 1944 and 1945. But, judging by Berlin, the mortality of the population in these years rose sharply: during the first war years an average of 60,000 people died in Berlin annually, while in 1945 the number of deaths reached 161,000, i.e., an increase of 100,000. Mortality climbed steeply in Austria and Hungary: 230,000 people died in these countries in 1940, while in 1945 the number of deaths was 385,000. Mortality of the civilian population rose noticeably in Japan: from 1,280,000 in 1944 to 2,114,000 in 1945. Italy is the only country in this group in which mortality in 1945 did not rise and even declined. This evidently is explained by the fact that Italy had withdrawn from the war a year earlier.

In presenting all these figures we must note that in a number of countries direct battle losses were also included in the total mortality.

As pointed out earlier, the general death-rate reduces the level of civilian mortality in war time. This level is reflected much more correctly by the age-group death-rate. Given no decline in births, it usually rises in war time.

In France, for example, the death-rate of children during World War II was as follows [1]:

Years	Newborn infants up to one year	Children from 1 to 4 years
1935–37	66.4	5.2
1939	62.5	5.4
1940	89.0	7.6
1941	110.2	6.8
1945	109.9	7.8
1946	73.7	3.9
1947	67.1	3.1

In 1941, infant mortality in France increased approximately 70 per cent and the mortality of children from one to four years by almost 50 per cent.

The last war year was hard for many countries. In Austria, for example, infant mortality in 1945 almost doubled (from 88 per 1,000 newborn infants in 1944 to 162 in 1945); in Czechoslovakia it rose from 109 in 1944 to 137 in 1945; in the Netherlands, from 46 to 80 respectively. In Berlin every third newborn infant died in 1945.

Chapter III. DIRECT WAR LOSSES AMONG THE CIVILIAN POPULATION

Since ancient times the civilian population has suffered from war not only as a result of the general economic derangement and disturbance of normal living conditions, but also from hostilities and enemy terror. In olden times victorious enemy troops frequently slaughtered a large part of the civilian population of the vanquished country. In such cases losses among the peaceful population were at times much bigger than the battle casualties.

However, losses caused by starvation and epidemics were particularly large. In this respect a distinction should be drawn between *direct* and *indirect* civilian losses caused by war. While we regard civilian deaths from starvation and epidemics which become widespread in war time as indirect war losses, the consequences of starvation and epidemics in conditions of siege and blockade must be considered as direct losses.

[1] See R. Pressat, "Vues générales sur la mortalité française depuis la guerre". *Population*, 1954, No. 3, pp. 479, 484.

Such direct civilian losses were considerable in past wars too and many people perished directly in the zone of hostilities.

Civilian losses were particularly heavy during the Thirty Years' War. Almost all the German and Czech lands were the arena of hostilities. Bohemia was the main sufferer during the first period of the war, but later hostilities shifted to the banks of the Rhine.

Subsequently a considerable part of Prussia was swept by the war, and then the people of Saxony, Bavaria and other German lands were also hit by it. By 1639 the devastation had reached its peak. Hundreds of villages were put to the torch. One Swedish general, for example, razed 800 Bohemian villages. In the Saus district alone 400 villages were reduced to ashes. It has been estimated that altogether during the war the Swedes razed and destroyed 1,976 castles, 1,629 towns and 18,310 villages.[1] In such warfare civilians perished wholesale. It is accepted that during the looting of Magdeburg alone, 30,000 civilians were slaughtered. The population of Bohemia dropped from 4,000,000 to 800,000. The losses among the civilian population during the war were measured in millions.

Many peaceful inhabitants perished during the Napoleonic wars. The war in Spain, accompanied by widespread epidemics, prolonged sieges and the general ruin of the country, was particularly devastating for the civilian population. *Frölich*[2] holds that 2.4 million people perished in the Spanish war of which soldiers account for only a small part. Frölich also estimates the losses among the civilian population in France and Germany during the Napoleonic wars at one million, a figure which is probably not far from the truth.

There were particularly big civilian losses during sieges when the population died wholesale from starvation and epidemics. In 1467 an epidemic, resulting from the siege of Novgorod, carried off 48,000 people. In 1800, more

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[1] B. Urlanis, *Rost naseleniya v Yevrope* (Growth of Population in Europe), Moscow, 1941, p. 126.

[2] H. Frölich, "Über die Menschenverlusten in Kriegen", *Streffleur's Österreichische Militärische Zeitschrift*, 1888, S. 20-109.

than 20,000 people perished during the siege of Genoa and in 1809, tens of thousands of civilians died during the siege of Saragossa. Even when there were no sieges, epidemics which broke out in the army swiftly spread among the civilians, causing many deaths.

Speaking of deaths among the peaceful population in the zone of hostilities, special mention should be made of deaths from shelling. In besieged Leningrad alone 16,747 civilians died from artillery shelling.[1] It thus may be assumed that hundreds of thousands of civilians died from this cause during the war.

Another category, victims of aerial bombings, was added to direct war losses in the 20th century. The bomber appeared during the World War I causing even then certain civilian losses. During the 1914-1918 war raids by the German aircraft killed about 1,000 civilians in Rheims, 500 in Lannes, 532 in Paris, 548 in Dunkirk, 200 in Arras, 200 in Nancy and several hundreds in other cities. About 3,500 civilians were killed in France as a result of aerial bombing and artillery shelling.[2] The civilian population of Britain also suffered from aerial bombings in World War I: 1,117 people were killed and 2,886 were wounded.[3] In addition, 1,000 people perished in Italy and 750 in Germany.[4] The total number of killed during air raids in World War I was 5,000.

These figures are negligible as compared with civilian losses from bombing in subsequent wars.

In the war against Abyssinia in 1934-35 the Italian fascists made extensive use of aircraft to annihilate the peaceful population.

In the Spanish Civil War, the fascists ruthlessly bombed cities, inflicting enormous losses on civilians. Suffice it to recall the bombings of Guernica, Barcelona and other cities.

But the aerial bombing during World War II caused truly immense losses among the civilians.

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[1] See *The Nuremberg Trials*, Vol. 3.

[2] H. Huber, op. cit., p. 314.

[3] F. W. Hirst, op. cit., p. 312.

[4] A. Rubakin, *Imperializm i ukhudsheniye zdorovya trudyashchikhsya* (Imperialism and the Deterioration of the Working People's Health), Moscow, 1959, p. 117.

The countries which unleashed World War II, Germany and Japan, suffered most from aerial bombing. The war conflagration fanned by German nazism devoured countless peaceful inhabitants, including women, children and aged.

The Germans, who were the first to subject Soviet towns and rural communities to barbarous bombings, before long themselves tasted the full horror of air raids.

Between October 1940 and February 1942, an average of only 219 civilians in Germany were killed monthly as a result of air raids, but from March 1943 to January 1944 this figure rose to 8,100 and in the second half of 1944 reached 14,000.

Germany's civilian population suffered big losses primarily from British and American air raids. For example, 45,000 people perished during British air force raids from July 25 to August 3, 1943, and about 30,000 civilians were killed during the Anglo-American air raids on Berlin on February 14 and 15, 1945. A further 60,000 people perished during the raid on Dresden in 1945, 45,000 people were killed in Hamburg and 23,000 in Kassel, etc. About 100 large and medium-size German cities were bombed. Approximately 4,000,000 flats and a total of 100 million square metres of floorspace were destroyed.[1]

Total losses of Germany's civilian population from aerial bombings range between 400,000 and 500,000. British Prime Minister Attlee, evidently wishing to minimise the losses inflicted on Germany's population by the Anglo-American air force, named a somewhat smaller figure, 350,000. American estimates range from 375,000 to 422,000 whereas the Germans themselves name higher figures.

According to calculations made by West German statisticians, 410,000 civilians perished from air raids in Germany within the borders of December 31, 1937, plus a further 32,000 foreign workers and prisoners of war and 23,000 servicemen and policemen—altogether 465,000. In addition, 697,000 people were wounded.[2]

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[1] T. Weber, "Zur Bilanz des uneigenschränten Luftkriegs gegen Deutschland", *Flugwehr und Technik*, 1955, No. 7, S. 160.

[2] H. Sperling, "Die Luftkriegsverluste während des Zweiten Weltkrieges in Deutschland", *Wirtschaft und Statistik*, 1956, No. 10, S. 498-499.

Bransch, a Reich Health Commissioner, mentioned a higher figure, of 535,000, but this also includes losses of the army in the rear, losses of the police, foreign workers, and concentration camp prisoners.

The civilian population of Japan also suffered heavy casualties. [1]

Category of casualties	Urban population	Rural population	Total
	(thousands)		
Killed	281	18	299
Severely wounded . . .	140	6	146
Lightly wounded	186	13	199
Missing	23	1	24
Total	630	38	668

Altogether some 323,000 civilians perished in Japan during World War II. Tokyo suffered the biggest losses (95,000 killed), but the heaviest losses in percentage of population were suffered by Hiroshima and Nagasaki, on which A-bombs were dropped by the U.S. Air Force. The bombing of Hiroshima on August 6, 1945, caused tremendous destruction and loss of life. By mid-November 1945, the total number of victims in Hiroshima (killed and dead from radioactive contamination) had reached 64,000, i.e., more than one-fourth of the city's population. In Nagasaki the number of A-bomb victims is estimated at 39,000. [2]

Even now A-bomb victims die in Hiroshima and Nagasaki. Special research by a group of Japanese scientists has established that about 2,000 people [3] die annually in Hiroshima from among those who were subjected to the

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[1] See Ayanori Okasaki, *Histoire du Japan: L'economie et la population*, Paris, 1958, p. 137.

[2] See *Deistviye atomnoi bomby v Yaponii* (Effects of Atomic Bomb in Japan), Medical Literature Publishing House, Moscow, 1960, p. 11.

[3] S. Akimoto, K. Honda, N. Kusano, H. Nakamura, H. Shiga, "Further Review of the Reports on the Late Effects of the Atomic Bomb in Hiroshima and Nagasaki", *Acta medica et sociologica*, A. II, Nos. 1-2-3, p. 303, Rome, 1963.

A-bombing. Ordinarily, about 500 people[1] would die according to our calculations. Thus it may be considered that since the A-bomb explosion about 40,000 people have died from after-effects.

In countries of the anti-Hitlerite coalition losses from aerial bombing were much smaller. This is explained by their well-organised anti-aircraft defence and the superiority of the Allies in the air. Britain's losses from Luftwaffe bombings were as follows:

Years	(thousands)	
	Killed	Severely wounded
1940 *	23.8	30.5
1941	20.9	21.8
1942	3.2	4.1
1943	2.4	3.5
1944	8.4	22.0
Total	58.7	81.9

* Including a small number of victims in 1939.

Thus total losses in Britain from aerial bombing are estimated at 60,000, including 24,000 women and 7,000 children. Civilian losses were greatest in the autumn of 1940 during the Battle of London. For example, in September 7,000 peaceful inhabitants perished and in October, 6,000. Losses in the spring of 1941 were also considerable when the nazis resumed their heavy air raids on Britain: in April 6,000 people were killed and in May, 5,000.

After the attack on the Soviet Union, the intensity of Luftwaffe raids on Britain sharply diminished. In the second half of 1941, about 200 people perished monthly and losses in 1942, 1943 and the first half of 1944 were

[1] The death-rate in Japan for people above ten years of age is 8-8.5. In 1956, the surviving population of Hiroshima which had been subjected to the bombing numbered 83,000. Taking this rate, we obtain a figure of approximately 500 dead annually.

about the same. It was only after British troops landed in France that the nazis resumed their aerial attacks on Britain: in June, July and August 1944 more than 5,000 civilians were killed. However, notwithstanding the use of the V-2 by the Germans, bombing losses among the civilian population of Britain were one-seventh of those in Germany.

Bombing losses in France are estimated at 50,000 people. The population of the Netherlands sustained heavy losses; in Rotterdam alone the Luftwaffe destroyed 80,000 homes and killed 30,000 people.

Total civilian losses from aerial bombing are estimated as follows:

	(thousands)		(thousands)
Germany	500	Austria	24
Japan	350	Other countries participating in World War II	500 **
Britain	60		
France	50		
The Netherlands	30 *		

* In Rotterdam alone.

** For U.S. sources see "Civilian Death from Air Bombardment", *Statistical Bulletin*, Metropolitan Life Insurance Co., 1946, No. 7, pp. 1-4. The estimate for other countries is 200,000, but we consider that this is only 40 or 50 per cent of the actual number of victims.

Thus, the total number of civilians who perished from air raids reaches the huge figure of 1.5 million—300 times greater than in World War I.

Victims of terror, too, come into the category of direct war losses of the civilian population.

During World War I, after Russian troops had entered Turkish territory, Young Turks, incited by the German imperialists, organised massacres of Armenians in 1915. Prior to the mass slaughter 2,100,000 Armenians resided in Turkey (data of the Armenian Patriarchy). After the pogroms about 600,000 people remained alive—those who fled to the Caucasus or survived in Turkey. In other words, 1.5 million Armenians were the victims of genocide.[1]

[1] Y. Tarle, *Yevropa v epokhu imperializma, 1871-1919* (Europe in the Epoch of Imperialism. 1871-1919), Moscow and Leningrad, 1928, pp. 387-93.

Hence German imperialism must be considered responsible for the death of a considerable number of Armenians during World War I.

The peoples of European countries sustained huge losses as a result of nazi terror during World War II. The Hitlerites systematically applied their "line" of slaughtering the nations regarded by them as "inferior". The mass terror claimed about 2 million Poles and 1.2 million Yugoslavs. Still heavier were the losses sustained by the Russian and other peoples of the Soviet Union. Altogether about 11-12 million civilians perished as a result of nazi terror.

Hitler set out to "solve" the Jewish problem by slaughtering all citizens of Jewish nationality.

Altogether about 6,000,000 Jews perished, i.e., three-fourths of the entire Jewish population in Europe prior to World War II. The remaining one-fourth survived thanks to the heroic Soviet Army which defeated the nazi fiends.

The number of victims in various concentration camps, according to evidence put forward at the Nuremberg Trials and other documents, was as follows:

Name of camp	thousands	Name of camp	thousands
Oswięcim	4,000	Dachau	500 *
Majdanek	1,500	Mauthausen . . .	123
Treblinka	781	Buchenwald . . .	52

* Only in 1943 and 1944.

According to incomplete data about 7 million people were done to death in these six camps alone. Many millions more perished in other camps and outside of them.

The total number of people killed by the nazis both in death camps and outside of them is well over 12 million. But the number of victims in the camps also included many prisoners of war, while the figure of 11-12 million who perished from nazi terror covers only the civilian population.

The blockade of Leningrad inflicted a tremendous loss on the Soviet people. The people of besieged Leningrad, suffering from starvation and cold, heroically defended

their city. L. N. Smirnov, Soviet prosecutor at the Nuremberg Trials, pointed out in his speech that as a result of the starvation caused by the blockade 632,253 people died in Leningrad. [1]

Direct civilian losses did not stop after the end of World War II. Suffice it to recall the losses during the national-liberation wars in Africa and Latin America. More than 500,000 peaceful civilians died during the war of liberation in Algeria, many thousands of women and children perished in the Korean War and during the "dirty war" waged by the French colonialists in Indo-China. The present "dirty war" waged by the U.S. imperialists in Vietnam is also exacting a huge toll.

Lenin wrote about such colonial wars: "...Take the history of the little wars they [the colonialists.—*B. U.*] waged before the big war—'little' because few Europeans died in those wars, whereas hundreds of thousands of people belonging to the nations they were subjugating died in them." [2]

For many countries the 20th century spelled a return to the dark periods of Antiquity and the Middle Ages when the innocent population was annihilated wholesale by "fire and sword" during wars. If judged by the scale of human losses, the "civilised" 20th century has claimed a far greater toll than the darkest periods in man's history.

Chapter IV. TOTAL WAR LOSSES

It is obvious from the above data what a tremendous toll wars exacted from mankind. This, naturally, is reflected in population dynamics.

We have no data on wars in the past owing to the absence of population censuses which only came into being in the middle of the 18th century.

The Seven Years' War was the first big war whose impact on population dynamics can be judged from available statistical material. In Prussia, for example, the

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[1] *The Nuremberg Trials*, Vol. 3.
[2] V. I. Lenin, *Collected Works*, Vol. 24, p. 406.

change in population as a result of the war was as follows [1]:

Districts of Prussia	Size of population (thousands)		
	Before the war (1755)	After the war (1764)	Decline, per cent
Eastern Prussia	636	587	8
Pomerania	373	325	13
Neumark	222	200	10
Kurmark	585	564	4
Silesia	1,162	1,112	4
Magdeburg	226	215	4
Halberstadt	103	100	3
Maiden Rawensberg . .	164	154	6
Cleve-Mark-Mers-Holdern	271	236	13
Ost Friesland	91	91	0
Neuchâtel	32	32	0
Total	3,865	3,616	6

Thus, over nine years of which seven were war years, the population of Prussia decreased by 6 per cent.

In Austria the population decline resulting from the Seven Years' War was more considerable.[2] (See table on p. 282.)

Even the fact that a country's population remains unchanged shows that the people are suffering great privation. Only in times of great hardship can the number of deaths equal the number of births. An actual decline in the population indicates particularly great suffering. The 15 per cent decrease in Austria's population shows that the Seven Years' War took a big toll in lives.

In 19th-century wars in Europe the population declined only in isolated years. For example, the population of Spain suffered greatly during the Napoleonic invasion. The population of France declined in 1805, 1807, 1813 and

[1] O. Behre, *Geschichte der Statistik in Brandenburg-Preussen*, Berlin, 1905, S. 458, 462.

[2] Excluding the Tyrol and Vorarlsberg, for which there is no data relating to 1762. See H. Grossmann, "Die Anfänge und geschichtliche Entwicklung der amtlichen Statistik in Österreich", *Statistische Monatschrift*, 1916, J. 21, S. 235.

Size of Population
(thousands)

Parts of Austria	Before the war (1754)	After the war (1762)	Decline, per cent
Bohemia	1,942	1,669	14
Moravia	867	835	4
Silesia	154	136	12
Lower Austria	930	777	16
Upper Austria	430	417	3
Styria	697	496	29
Carinthia	272	260	4
Kraina, Herz and Hradiska	447	300	33
Total	5,739	4,890	15

in 1870-71. The population of Russia decreased somewhat in 1813. In all other cases 19th-century wars brought about a decline in the growth rate rather than in the absolute size of the population.

To illustrate this point we present data on the population of Russia before and after the 1812 war. Comparing the results of a census taken in 1815 with one for 1811, we find that an absolute decline was observed only in a few areas.

Areas	Size of population (thousands)		Absolute decline
	1811	1815	
Central industrial	3,271	3,229	42
Central agricultural	3,506	3,365	141
Kurland Gubernia	204	203	1
Smolensk Gubernia	488	449	39
Eastern Byelorussia and Latvia	768	663	105

While the population decreased in the areas affected by hostilities, the total population of Russia increased from 32.6 million to 33.1 million between 1811 and 1815 (within the borders of the first census), whereas the population

growth rate during this period was cut by half (0.91 per cent in 1795-1811 and 0.42 per cent in 1811-15).[1]

The situation in other parts of the world was different. For example the prolonged peasant revolutionary war in China (the Tai-ping Rebellion in 1851-64) greatly depleted the country's population. Wars in South America also inflicted big losses. As a result of the 1864-70 wars the population of Paraguay declined from 1,300,000 to 300,000, i.e., by more than 80 per cent.[2]

According to *Mulhall*, the losses of Brazil and Paraguay in that war amounted to 300,000 men, but this estimate probably covered only military losses. *Vacher de Lapouge* put losses in Latin American wars at 500,000 men, whereas *Leroi-Beaulieu* estimates losses in Latin American wars between 1863 and 1866 alone at 519,000 men.

The population suffered much greater losses in the two world wars fought in the 20th century.

As many as 36 states with a total population of 1,050 million people, or more than half of mankind at that time, participated in World War I. Europe was the main theatre of hostilities and for this reason the European population suffered most. Its effect on Western Europe can be judged from the following figures[3]:

Excess (+) or Deficiency (—) of Births as Compared with Deaths
(thousands)

1912	+3,900	1917	—1,865
1913	+3,223	1918	—3,461
1914	+2,157	1919	+1,097
1915	—231	1920	+3,239
1916	—1,654		

Prior to World War I the annual natural increase of the population of Western Europe exceeded 3 million people. The situation changed sharply when war broke out and the increase gave way to a sudden drop. This

[1] See V. Kabuzan, *Narodonaseleniye Rossii v XVIII — pervoi polovine XIX veka* (Population of Russia in the 18th and First Half of the 19th Century), Moscow, 1963, pp. 164-65.

[2] See G. Bouthoul, *Le phénomène guerre*, Paris, pp. 101-102.

[3] See B. Urlanis, *Rost naseleniya v Yevrope*, 1941, p. 294. Losses in Balkan wars have been specified.

decrease was particularly noticeable in 1918 when thousands of people perished from the Spanish flu. The population began to increase again in 1919, but only in 1920 did it exceed the figure of 3 million.

On the eve of the war Western Europe had a total population of 353 million, which, by the middle of 1919, had declined to 345 million. The pre-war level was regained only in 1923. Thus, to restore the previous size of population, five years of peace were needed. Still greater losses were inflicted on Russia which, after World War I, was subjected to foreign intervention and a devastating civil war.

World War II claimed a still bigger toll of civilians. Hostilities spread to 40 countries whereas in World War I they were fought only on the territory of 14 countries. The number of belligerents reached 61 with a total population of 1,700 million people, i.e., more than 75 per cent of mankind. [1]

The Soviet people, who bore the main brunt of the struggle against nazism, suffered the greatest losses in World War II. Altogether the Great Patriotic War "took a toll of 20 million Soviet lives". [2]

On the territory of the U.S.S.R. alone the nazis killed and tortured to death 6,074,000 civilians and 3,912,000 Soviet prisoners of war.

Returns of the 1959 population census attest to the grave losses suffered by the U.S.S.R. in the late war. According to this census, there were 114.8 million women and 94 million men in the country. We should bear in mind, however, that even before the war there was a considerable excess of women in the U.S.S.R. According to the 1939 census, there were 88.9 million women and 81.7 million men, a difference of 7.2 million. The pre-war excess of females was explained not only by the influence of World War I and the Civil War, but also by the fact that mortality of women declined to a greater extent than that of men. This

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[1] See *Istoriya Velikoi Otechestvennoi voiny*, Moscow, 1965, Vol. 6, p. 8.

[2] *International Affairs*, 1961, No. 12. U.S. statisticians are underestimating the losses suffered by the Soviet Union in the late war. For example, the *Information Almanac* (1964) gives the figure of 6,115,000 people as the total losses of the U. S. S. R.

factor also operated in the 20 years between the two censuses.[1] Therefore, even if there had been no war the excess of females would not have been levelled out by 1959.[2]

Between 1926 and 1939, although there was no war, the excess of females increased: in 1926 there were 1,070 women per 1,000 men and in 1939, 1,087 women. Moreover, the 1939 census covered the territory of the Soviet Union in its borders prior to September 17, 1939. If we take into account the subsequent territorial changes, the actual excess of females prior to the war in the present boundaries of the U.S.S.R. stood at 8 million people.

For a more detailed analysis of the excess of females it is necessary to compare the number of women with the number of men by age-groups (see table on p. 286).

It would be a great mistake to consider that the post-war excess of females corresponds to the number of men who perished during the Great Patriotic War of 1941-45.

The table shows that mortality among women was much lower than among men. While in the age-group up to 20 years there were 1.2 million men more than women, from the age of 20 to 29 years this excess, a result of the fact that 106 boys are born per 100 girls, is absent and a female excess of nearly 600,000 is registered. The preponderance of women in this group has no bearing whatsoever on war losses, since people of this generation were born between 1929 and 1938.

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[1] Whereas before the revolution a woman's average life span was two years higher than that of a man, by 1926-27 it was five years higher and by 1957-58, seven years higher (*SSSR v tsifrakh v 1959 godu* [The U. S. S. R. in Figures in 1959], Moscow, 1960, p. 245).

[2] A similar mistake has been made by Warren Eason, an American specialist on Soviet population statistics. In his article on the population of the Soviet Union, he attributes the entire excess of females, as exemplified by the 1959 census, to the Second World War. This is all the more surprising since in the same article he cites the correct figure of 7.2 million for the excess of females revealed by the 1939 census (for the U. S. S. R. within the 1939 borders). Evidently he proceeded from the assumption that this excess should have vanished by 1959, whereas in fact such a supposition is utterly groundless. (Warren W. Eason, "The Soviet Population To-Day. An Analysis of the First Results of the 1959 Census", *Foreign Affairs*, July 1959, p. 602.)

Sex Composition of the Population of the U. S. S. R. Data of 1959 Census

(thousands)

Age-groups	Males	Females	Excess of males over females	Excess of females over males
0 to 9 years	23,608	22,755	853	—
10 to 19 "	16,066	15,742	324	—
20 to 24 "	10,056	10,287	—	231
25 to 29 "	8,917	9,273	—	356
30 to 34 "	8,611	10,388	—	1,777
35 to 39 "	4,528	7,062	—	2,534
40 to 44 "	3,998	6,410	—	2,412
45 to 49 "	4,706	7,558	—	2,852
50 to 54 "	4,010	6,437	—	2,427
55 to 59 "	2,905	5,793	—	2,887
60 to 69 "	4,099	7,637	—	3,538
70 to 79 "	2,021	4,148	—	2,127
80 years and older	520	1,283	—	763

In subsequent age-groups this excess of females increases primarily as a result of the lower mortality of women, but beginning with the 35-39 age-group this is aggravated by the loss of men during World War II, and, with the 55-59 age-group, by losses in the Civil War and World War I.

Even if there had been no war the excess of females would have not disappeared by 1959 due to the difference in mortality between the sexes and would possibly have even increased. If we proceed from the premise that this excess would have not changed, then the excess of females resulting from the 1941-45 war would have equalled 13 million.

This figure, however, does not reflect the losses of men during the war since many women also died. If, in addition to the death of a soldier on the battlefield, his sister or wife died during the blockade of Leningrad, the loss of these two lives in no way influenced the excess of females. The scale of equal losses of men and women can be deduced as the difference between total losses (20 million) and the greater excess of females caused by the

war (13 million),[1] i.e., 7 million. By dividing this figure in half we establish that the total male losses should be set at 16.5 million and females, at 3.5 million.

The loss of life in the Soviet Union can also be estimated by comparing the population censuses of 1939 and 1959.

Age Composition of the Population of the U. S. S. R.

Generation (years of birth)	Age in 1939	Size of these generations in 1939 (millions)	Age in 1959	20 years later	
				Number survived (millions)	Percentage of survivors
1929–38 . . .	0–9	43.5	20–29	38.5	88.5
1919–28 . . .	10–19	41.4	30–39	30.6	73.9
1914–18 . . .	20–24	15.8	40–44	10.4	65.9
1909–13 . . .	25–29	18.5	45–49	12.3	66.5
1904–08 . . .	30–34	15.6	50–54	10.4	66.7
1899–1903 . .	35–39	13.0	55–59	8.7	66.9
1889–98 . . .	40–49	17.4	60–69	11.7	67.3
1879–88 . . .	50–59	12.5	70–79	6.2	49.6
1878 and earlier . . .	60 years and over	13.0	80 years and over	1.8	13.9
Total . .	—	190.7	—	130.6	—

In 1939, of the number covered by the 1939 census about 2.5 million people died under normal peace-time conditions.[2] In 1958 the "normal mortality" was approximately 1.2 million.

[1] True, this excess of females was registered only 13 years later, and not immediately after the war ended. But in the first post-war year the decline in the excess of females was insignificant.

[2] In 1939 the average annual population was 193 million people. With a birth-rate of 36.5, a death-rate of 17.3 and infant mortality of 16.7 per cent, the absolute figures will be as follows:

	millions
Births in 1939	7.3
Deaths in 1939, total	3.3
Deaths of infants under 1 year, ...	1.2
of which infants born in 1939	0.8
Number of deaths in 1939 minus infants born in 1939	2.5

Assuming an even decline in mortality between 1939 and 1959 and taking into account the gradual elimination of high mortality in the first years of life, we may assume that an average of 2 million people would die in peace-time conditions. This means that in the 20 years between the two censuses, in peace-time conditions, about 40 million people would die. Actually the loss, as seen from the above table, was 60 million. The difference of 20 million can be regarded as the figure of total losses sustained by the Soviet Union during the Great Patriotic War of 1941-45.[1]

This figure includes soldiers and officers who were killed at the front, died from wounds, disease and accidents or perished in captivity and also the civilian population which perished from fascist terror, in nazi concentration camps, during the blockade of Leningrad, or from aerial bombing, i.e., all whose death was caused by the war. Our task now is to establish the composition of these losses. However this will be possible only after the publication of new statistical data directly relating to the history of our country during the war years.[2]

A considerable proportion of these losses must be attributed to hostilities and to concentration camps and forced labour in Germany and in the countries occupied by the nazis. Many Soviet citizens were also killed on

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[1] It is possible that the assumed average annual figure of deaths (2 million) is somewhat exaggerated. The arithmetical mean of the number of deaths at the beginning of the period (2.5 million) and at the end of the period (1.2 million) is 1.85 million; applying this, the estimate of losses will go up to 23 million. Moreover, the population figure for 1939 should be increased by about 1.1 million (addition of the Trans-Carpathian region and the Tuva Autonomous Republic) raising it to 191.8 million. But in view of the adverse migration balance in post-war years (displaced persons, repatriation of Polish citizens, etc.) the figure of 20 million losses is more correct.

[2] The sex composition of the losses can also be roughly estimated on the basis of the following data: the total population of the U.S.S.R. in 1939 (190.7 million) consisted of 91.45 million males and 99.25 million females. Of them 54.3 million males and 76.3 million females survived 20 years later, in 1959. Taking the "normal" mortality of each sex as one million a year we find that in 1959 there should have been 71.45 million men, i. e., 16.5 million more than the actual number, and 79.25 million, i.e., 3 million more, women. These figures differ little from our estimates.

nazi-occupied Soviet territory. This is indicated by the following figures [1]:

Location	Number of killed Soviet civilians and prisoners of war (thousands)
Ukrainian Republic	4,497
Byelorussian Republic	2,198
Russian Federation	1,781
Lithuanian Republic	666
Latvian „	644
Estonian „	125
Moldavian „	64
Total	9,975

Altogether, about ten million Soviet people, i.e., half of all Soviet war losses perished on the territory occupied by the nazis.

The *German* people, who sacrificed millions of their young sons to fascism, also suffered great losses in World War II.

According to West German statistics, in addition to 4 million soldiers and officers, 2.5 million civilians perished—a total of 6.5 million fatalities, or almost 10 per cent of the country's population. The adult population suffered most and every sixth adult German was a victim of the war. Such is the terrible price the German people had to pay for succumbing to nazi demagogy.

Poland holds third place for the size of total war losses. The nazi fiends looked upon Poles as *untermenschen* and ruthlessly annihilated them.

While the losses of the Polish regular army in 1939 were not large, the losses of the Polish civilian population, who resisted the fascist enslavers, were tremendous. Hundreds of thousands of Poles perished during the heroic uprising in the Warsaw ghetto in 1943, and during the 1944 uprising in Warsaw when almost the entire population of the Polish capital participated in battles against the nazis. Besides, millions of Polish citizens perished in the crematoriums of Oswiecim, Majdanek and Treblinka.

Altogether six million Polish citizens perished. In com-

[1] See *Istoriya Velikoi Otechestvennoi voiny*, Vol. VI, Map 13.

parison with the size of Poland's population, these losses are greater than those suffered by any other country which participated in World War II.

Poland's losses, according to official data, are distributed as follows[1]:

Category of losses	(thousands)
Direct result of military operations	
a) military losses	123
b) civilian losses	521
Total	644
Victims of concentration camps, executions, liquidation of ghettoes, etc.	3,577
Victims of prisons, camps and other places of confinement (death caused by epidemics, exhaustion, etc.)	1,286
Died outside camps and prisons, owing to wounds, injuries, overwork, etc.	521
Total	6,028

Yugoslavia also sustained big losses. In this country, as in Poland, the civilian population suffered most. Total losses are set at 1,706[2] of whom 300,000 are soldiers and officers.

The losses of other European countries were much smaller.

French losses were as follows:

	(thousands)
Servicemen	250
Civilians perished:	
from bombings	60
nazi terror	90
forced labour in Germany	40
German concentration camps	160
Total civilian population	350

Altogether 600,000 French citizens perished, of whom more than half were civilians.

Great Britain lost about 350,000 people in World War II.

[1] *Otchot o poteryakh i voyennom ushcherbe, prichinyonnom Polshe v 1939-1945 gg.* (Report on the Losses and War Damage Inflicted on Poland from 1939 to 1945), Warsaw, 1947, p. 25.

[2] See *Istoriya Velikoi Otechestvennoi voiny*, Vol. VI, p. 30.

Italy lost about half a million people, of whom 400,000 were servicemen and about 80,000 civilians.

Czechoslovakia also suffered heavily: "340,000 people were killed, perished in concentration camps and from forced labour abroad during the occupation"[1] (not counting the 200,000 Sudeten Germans who perished in the war).

Rumanian, *Greek*, *Austrian*, *Hungarian*, and *Dutch* losses also ran into hundreds of thousands. *Finnish* and *Belgian* losses were less considerable. *Bulgaria*, *Denmark* and *Norway* had the smallest losses.

Of the non-European countries China suffered most. She was in a state of war since 1937, having been attacked by the Japanese militarists. Exact figures on Chinese losses have not yet been established, but there is every ground for assuming that the total number of victims in the war against Japan reaches 10 million people.[2]

Japanese losses were also considerable. In addition to servicemen, hundreds of thousands of civilians perished from aerial bombings.

Let us sum up all World War II losses by countries.

Country	(thousands)
U. S. S. R.	20,000
China	10,000
Germany	6,500
Poland	5,000 *
Japan	2,350
Yugoslavia	1,700
France	600
Italy	500
Rumania	500
Hungary	430
Greece	450
Great Britain	350
Czechoslovakia	340
Austria	374
United States	300
Netherlands	210
Belgium	88
Finland	100

* Our estimate.—*B. U.*

[1] See *Istoriya Chekhoslovakii* (The History of Czechoslovakia), Vol. III, p. 332 (in Russian).

[2] See *People's China*, 1952, No. 19. The same figure is given in *Istoriya Velikoi Otechestvennoi voiny*, Vol. VI, p. 30.

Country	(thousands)
Canada	42
India	37
Australia	35
Bulgaria	35
Albania	30
New Zealand	12
Other territories of the British Empire	10
Norway	10
Union of South Africa	9
Luxemburg	5
Denmark	1
Brazil	1
Total more than	50,000

Thus, more than 50 million people perished as a result of World War II, with the Soviet Union bearing two-fifths of all the losses.

World War II losses are distributed by continents as follows (thousands):

Europe *	37,377
Asia	12,330
America	340
Australia, New Zealand	40
Africa	10
Total more than	50,000

* Including the population of the Asian part of the Soviet Union.

Three-fourths of all the losses were borne by Europe, which suffered more than any other continent from hostilities during the 20th century.

A distribution of all these losses by categories is of interest, but at present it is impossible to give exact estimates. Only preliminary figures can be cited which can afford merely a general idea of the composition of the losses.

Category of losses	Millions
Killed in battle, died of wounds and disease, perished in captivity (soldiers and officers of all belligerents) . . .	22
Civilians who perished in concentration camps and as a result of fascist terror	12
Civilians who perished from aerial bombings	1.5
Civilians who perished as a result of hostilities on land and sea or owing to blockade, starvation and epidemics, i. e., as a result of excess mortality in war time:	
a) in European countries	7
b) in China	7.5 *
Total	50.0

* A somewhat smaller figure (6 million, including the losses of the civilian population in Japan) is given by Arntz (see collection of articles *Bilanz des zweiten Weltkrieges*).

The number of victims among the civilian population is staggering. Millions of women and children were consumed in the conflagration of war. Mountains of children's shoes kept in museums at the former nazi concentration camps remind us of the horrible fate which befell these innocent victims of nazi atrocities. Mankind paid a price of 50 million lives for Hitler's insane attempt to gain world domination and enslave all nations.

A summary of losses by countries subdivided into losses among servicemen and civilians is of interest (see table on p. 294).

The composition of losses by individual countries reveals essential differences. In Poland almost all losses are among the civilian population and only 2 per cent are soldiers and officers, while in the United States soldiers and officers make up 100 per cent of the losses. The share of losses among civilians is also high in Yugoslavia, Czechoslovakia, Greece and China.

For all countries 43.6 per cent of all losses are servicemen (including guerrillas), 3 per cent are civilians who perished as a result of bombings, while half of all losses are people who perished in nazi concentration camps and other places of mass slaughter, or victims of blockade, starvation and disease caused by war.

Losses by Countries
(thousands)

Country	Losses among soldiers and officers	Losses among civilian population	Total losses
U. S. S. R.	10,000	10,000	20,000
Poland	123	4,877	5,000
Yugoslavia	300	1,400	1,700
France	250	350	600
Great Britain	290	60	350
Belgium and Luxemburg	17	76	93
Netherlands	12	198	210
Czechoslovakia	46	294	340
Hungary	136	294	430
Rumania	300	200	500
Bulgaria	25	10	35
Albania	30	?	30
Greece	100	350	450
Finland	84	16	100
Norway, Denmark	3	8	11
British dominions and colonies	145	—	145
United States	300	—	300
China	2,500	7,500	10,000
Germany	4,500	2,000	6,500
Austria	270	104	374
Italy	400	100	500
Japan	2,000	350	2,350
Brazil	1	—	1
Total in round figures	21,800	28,200	50,000

The following table shows the share of each country in the total losses and also the relation of its losses to the size of its population.

The population of the countries which participated in World War II numbered 1,700 million people, i.e., three-fourths of the world population. Three per cent of the entire population of the belligerent countries perished in the flames of war. But the percentage of losses differs greatly from country to country. In some of them 20 per cent of the entire population perished and in others only one-thousandth of a per cent. For this reason the average figure merely conceals the differences in the losses of various countries.

The group of countries which suffered the greatest losses includes Poland, Yugoslavia, the U.S.S.R. and Germany. The group of countries with large war losses includes Greece, Austria, Hungary, Rumania, Japan and Czechoslovakia. The countries which lost from 1 to 3 per cent of their population include Albania, Finland, the Netherlands, China, Luxemburg, France, Belgium and Italy.

Country	Share of a country's losses in total losses of all countries, per cent	A country's losses in relation to its population before the war, per cent	Place held by a country for gravity of losses
U. S. S. R.	40.0	10.1	3
China	20.0	2.1	14
Germany	13.0	9.0	4
Poland	10.0	19.6	1
Japan	4.7	3.4	9
Yugoslavia	3.4	10.6	2
France	1.2	1.5	16
Italy	1.0	1.1	18
Rumania	1.0	3.7	8
Greece	0.9	6.2	5
Hungary	0.9	4.6	7
Austria	0.7	5.6	6
Great Britain	0.7	0.7	20
Czechoslovakia	0.7	3.0	10
United States	0.6	0.2	25
Netherlands	0.4	2.4	13
Finland	0.2	2.7	12
Belgium	0.19	1.1	17
Canada	0.08	0.4	22
India	0.07	0.01	28
Australia	0.07	0.5	21
Bulgaria	0.07	0.3	23
Albania	0.06	2.7	11
New Zealand	0.02	0.8	19
Colonies of the British Empire	0.02	0.3	27
Norway	0.02	0.3	24
Union of South Africa	0.02	0.1	26
Luxemburg	0.01	1.7	15
Denmark	0.002	0.03	29
Brazil	0.002	0.002	30
Total (in round figures)	100.0	3.0	—

In the other countries losses were less than 1 per cent of the entire population. For example, out of the 30 countries listed above, Britain holds 20th place and the United States the 25th.

All this shows that the contribution of the various nations to the defeat of fascism differed greatly both in total figures and relatively.

* * *

After the end of the Second World War armed conflicts flared up in many parts of the world and the struggle of oppressed peoples for liberation developed on an unprecedented scale. Naturally, this too led to losses. In Europe 148,000 people were killed during the bitter civil war in Greece from February 1944 to September 1949.[1] In Asia, the great Chinese people scored a historic victory over imperialism and the internal reactionary forces in 1949. In this war 264,000 soldiers and officers of the People's Liberation Army were killed.[2] The number of killed and wounded in the Kuomintang Army reached 1,711,000. In the People's Liberation Army there were four wounded per one killed. Proceeding from this ratio it may be assumed that there were 342,000 killed in Chiang Kai-shek's army. In addition there were many casualties among the missing. (In the People's Liberation Army 196,000 men were posted missing.)

Losses from sickness in the People's Liberation Army were small owing to the high level of the medical service. Seventy per cent of all wounded and sick, whose number exceeded 1,000,000 men, were returned to active service.[3]

On the whole, available information indicates that more than 1,000,000 Chinese soldiers and officers perished in that war.

For many years the French colonialists waged a dirty war against the peoples of Indo-China. The French

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[1] See Chandler, *The Divided Land*, p. 195.

[2] These and other figures of losses are taken from *Tretya grazhdanskaya voina v Kitaye* (Third Civil War in China), Moscow, 1957, pp. 118-20.

[3] Kung Nai-chuan, "Some Questions on the Medical Service of China's People's Liberation Army", *Voyenno-meditsinsky zhurnal*, 1957, No. 2, p. 9.

armed forces lost 76,000 in killed and missing from 1946 to 1954.[1] According to other data the French lost 65,000 men in killed alone.[2]

In 1948, a war flared up between Israel and Arab states. About 5,000 people perished in this war.[3] In 1950, war broke out in Korea, claiming a substantial toll of lives. American casualties amounted to 34,000 killed and 103,000 wounded.[4] In 1956 the Arab Republic of Egypt was subjected to Anglo-Franco-Israeli aggression. The resumption of Israeli aggression in 1967 took a toll of many thousands of lives of both servicemen and civilians.

A war against the French colonialists was fought in Algeria from 1954 to 1962, in which the French army lost 17,000 in killed and 52,000 in wounded, according to official figures; 141,000 were killed on the Algerian side according to the same data.

The flames of war are still blazing in various parts of the world. In South Vietnam American troops are trying to crush the Vietnamese people's heroic struggle for independence. The peoples of Angola, Mozambique and Portuguese Guinea are likewise waging an armed struggle against the Portuguese colonialists, which naturally entails casualties, especially among the local population. A toll of lives was also taken by the military clashes between India and China and in 1965 between India and Pakistan. According to Indian sources, 3,840 Pakistanis and 1,157 Indians were killed in the Indo-Pakistani War.[5]

Chapter V. DEMOGRAPHIC CONSEQUENCES OF WAR

The end of a war does not stop the influence it exerts on population dynamics. Long drawn-out hostilities cause losses from which the population cannot fully recover for a long time.

Let us examine the age pyramid of the population of the U.S.S.R. at the beginning of 1964 (*Fig. 22*).

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[1] See B. Fall, *Indochine, 1946-1962*, p. 370.
[2] *Army Combat Forces Journal*, June 1955, p. 27.
[3] See Rubakin, *Imperializm i ukhudsheniye zdorovya trudyashchikhsya*, p. 122.
[4] *Statistical Abstract of the United States 1960*, p. 245.
[5] *Pravda*, September 24, 1965.

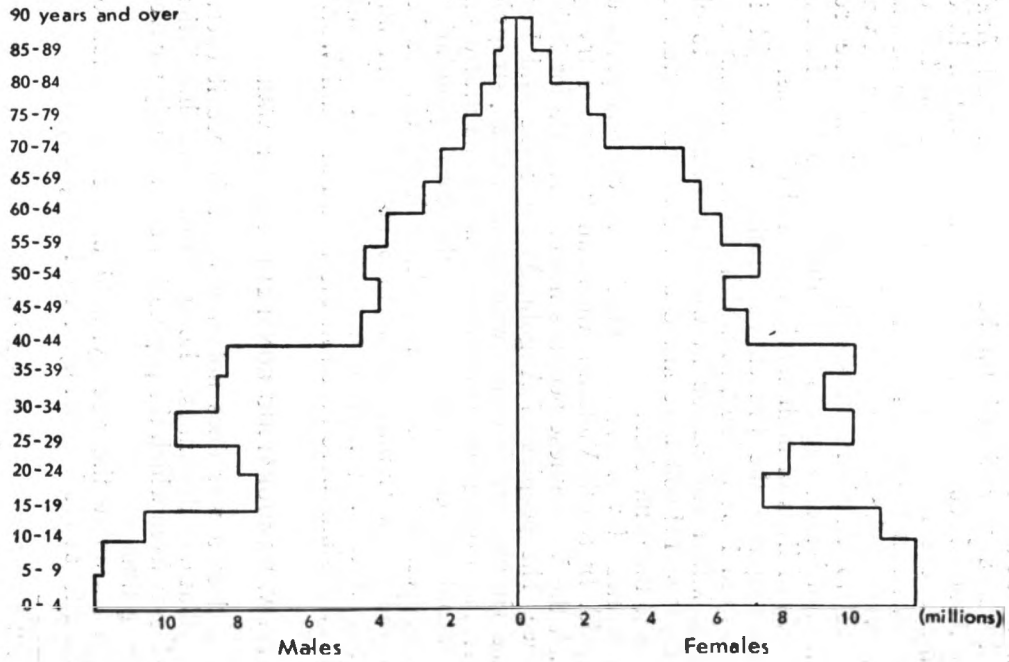

Fig. 22. Age Pyramid of the Population of the Soviet Union at the Beginning of 1964

This pyramid reflects all the major events in the history of the country which left an imprint on the age and sex composition of the population. We see a sharp decline in the 15 to 24-year age-group born from 1939 to 1948. If we exclude from this group those born from 1939 to 1940 and from 1946 to 1948, the dent formed by the drop of births in war time will be even more noticeable.

The second dent in the pyramid is in the 45 to 49-year age-group, i.e., those born from 1914 to 1918. This is a reflection of the drop in births in World War I. The pyramid also clearly illustrates the excess of women over men which resulted from the loss of life in the two world wars.

The age pyramid for Germany also has sharply pronounced demographic dents. The lower dent, in the age-group of 15 to 16 years, reflects the drop of births in the last years of World War II. The upper dent is in the 40 to 45-year age-group, and reflects the decline of births in World War I. But the configuration of the dents differs. For World War I it resembles a big depression, while for World War II it is sharp-pointed, leaving a thin scar on the people's body (*Fig. 23*).

Here we have the excess of females shown, beginning at 35 years, which is eloquent proof of the enormous loss of men in the war. These losses are also reflected in the large number of widows. In 1961, the "widow" stratum was considerable among women above the age of 45. Alongside this "stratum" one can clearly discern another one—unmarried women whose potential husbands were killed on the battlefields, robbing them of the chance to have a family of their own.

Let us also examine the age pyramid for France charted according to the 1962 population census (*Fig. 24*).

Here, too, we can clearly trace two demographic dents as a result of the world wars. The French pyramid differs from the German chiefly in its more obvious symmetry and solid base (i.e., the number of children). The disproportion in sexes in France is now observed only in the 65 to 75-year age-group where there is still a sharp discrepancy in the number of men owing to losses in World War I.

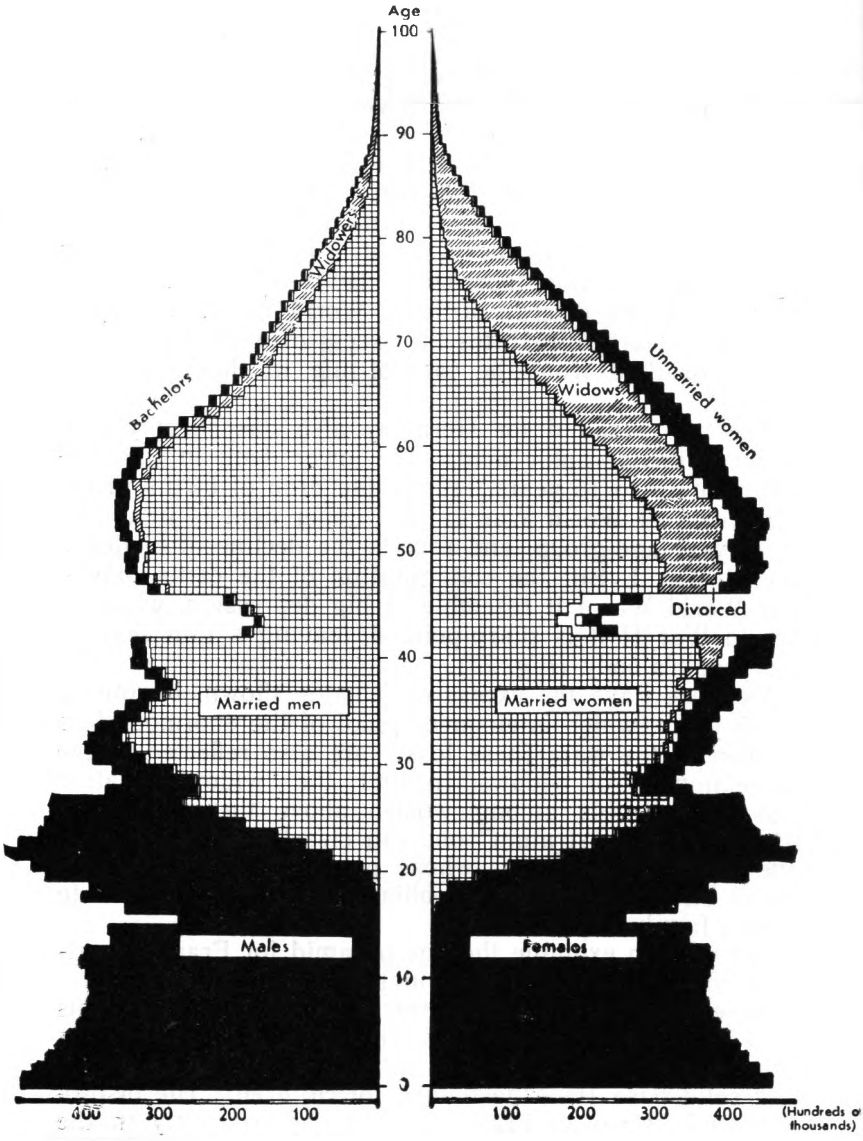

Fig. 23. Age Pyramid of the Population of the F.R.G. on June 1, 1961

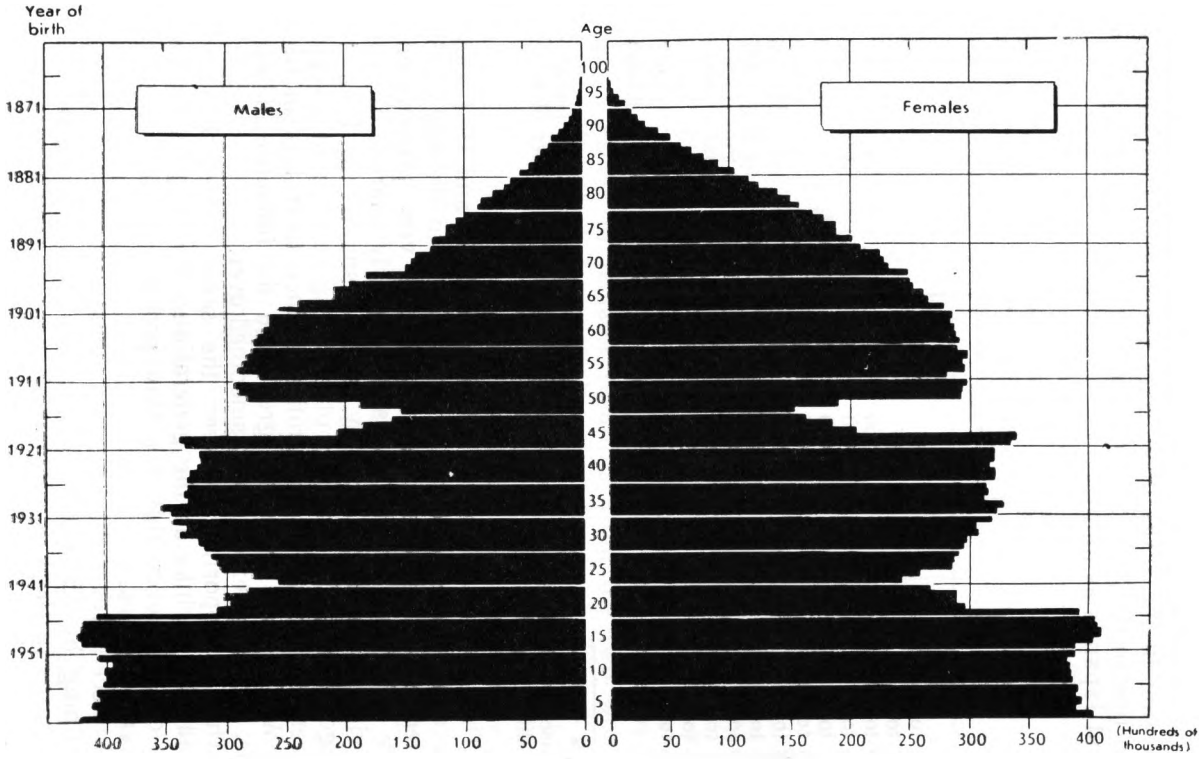

Fig. 24. Age Pyramid of the Population of France on January 1962

The entire population suffered from war but the losses were naturally greatest among men. The resultant disproportion in the sexes disappears very slowly. This disproportion in the Soviet Union, Germany, Poland, Yugoslavia and Japan is as follows:

Age-groups	Number of females per 1,000 males				
	U. S. S. R.	Germany	Poland	Yugoslavia	Japan
0 to 4 years	960	949	958	946	963
5 to 9 „	970	951	967	948	961
10 to 14 „	960	957	973	956	967
15 to 19 „	1,000	963	1,050	959	980
20 to 24 „	1,030	958	1,399 *	967	1,023
25 to 29 „	1,045	964	1,052	971	1,008
30 to 34 „	1,209	1,067	1,078	1,015	995
35 to 39 „	1,578	1,393	1,180	1,215	1,187
40 to 44 „	1,600	1,428	1,161	1,210	1,201
45 to 49 „	1,617	1,384	1,202	1,186	1,143
50 to 54 „	1,625	1,297	1,134	1,063	1,046
55 to 59 „	2,000	1,191	1,181	1,077	1,037
60 years and over	1,955	1,448	1,504	1,355	1,198

* The sharp upswing in the ratio between the sexes is probably caused by the exclusion of servicemen from the total number of males in this age-group.

These censuses were taken between 1959 and 1961 and, therefore, the effect of war is not felt up to the age of 35, whereas in the older age-groups it is very pronounced. The "shortage" of males is particularly marked in the Soviet Union and Germany, and is smaller in Poland, Yugoslavia and Japan. In other belligerent countries the excess of females is insignificant since their loss of life in World War I was not great and the influence of war has, to a large extent, been smoothed over.

The disproportion between the sexes caused by war gradually shrinks as the generations of war participants die out. However, this is a slow process and it lasts over several decades.

In recent years the excess of females has been steadily declining by 150,000-200,000 annually. The proportion of the sexes in the U.S.S.R. has changed as follows:

Year (beginning)	Number (millions)		Number of females per 1,000 males
	Males	Females	
1959	94.0	114.8	1,221
1960	95.9	116.4	1,214
1961	97.8	118.3	1,210
1962	99.7	120.0	1,204
1963	101.5	121.6	1,198
1964	103.2	123.1	1,193
1965	104.7	124.5	1,190
1966	106.3	125.9	1,184
1970	111.4	130.3	1,172

In the last 11 years the number of females per 1,000 males has declined from 1.221 to 1,172. But even this figure is far from the ratio which existed prior to the war (1,078 in 1939). In the U.S.S.R. the disproportion between the sexes in the main working age-groups has almost disappeared.

This excess of females resulting from the two world wars will only balance itself out at the beginning of the 21st century, i.e., after the natural death of the generation born from 1920 to 1925. In Germany, as seen from data for the German Democratic Republic[1] this process of healing war wounds has also been very slow.

Years	Females per 1,000 males	Years	Females per 1,000 males
1950	1,250	1957	1,230
1951	1,250	1958	1,230
1952	1,250	1959	1,220
1953	1,240	1960	1,220
1954	1,240	1961	1,220
1955	1,240	1962	1,210
1956	1,240	1963	1,210

In Germany, too, several decades are needed to restore the "normal" proportion between sexes and at least 50 years must pass for the war wounds to heal completely.

[1] *G. D. R. Statisticheskaya karmannaya knizhka, 1964* (Statistical Handbook of the German Democratic Republic, 1964), p. 179.

* * *

Despite huge losses of life in the two world wars, total populations were not noticeably affected even in Europe which bore the heaviest casualties.

The influence of World War I on the size of population in Western Europe can be judged from the following figures [1]:

Year	Population of Western Europe (millions)	Year	Population of Western Europe (millions)
1912	349	1918	349
1913	351	1919	345
1914	353	1920	346
1915	354	1921	349
1916	353	1922	352
1917	351	1923	356

During World War I the population of Western Europe declined by 1-2 million annually. The drop was biggest (4 million) in 1918 owing to the flu epidemic. However, by 1923 the population in Western Europe had been completely restored. Thus, the restoration period conformed approximately to the duration of the war period.

In the Soviet Union a longer period was needed because, in addition to the war of 1914-18, the size of the population was also affected by the intervention and the Civil War. Whereas in mid-1914 approximately 141 million people lived in Russia (within the borders of the U.S.S.R. up to September 17, 1939), by the end of 1926 the population within the same borders had already reached 147 million people. In 1925 and 1926 the natural increase was approximately 3 million people annually. This shows that the U. S. S. R. regained the pre-war population of 141 million only at the beginning of 1925, i.e., two years later than Western Europe. But since the period of hostilities lasted more than 6 years, the duration of the restoration period in relation to the war was actually somewhat shorter than in Western Europe.

Let us trace now the impact exerted by World War II on the population of the belligerent countries.

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[1] B. Urlanis, *Rost naseleniya v Yevrope*, Moscow, 1941, p. 281.

The U.S.S.R. had a population of 198 million before the war within its present-day frontiers. This level was regained approximately at the beginning of 1956, i.e., ten years after the war. Thus, the restoration period lasted ten years as compared with the four years of war, in other words, two and a half years of restoration were required for each war year.

The restoration process was much slower in Germany. Prior to the war against the U.S.S.R., Germany had a population of about 70 million. Both German states together with West Berlin regained this level only in 1955, i.e., ten years after the defeat and unconditional surrender. But account should be taken of the fact that about 3 million Sudeten Germans and 1.7 million Germans from Poland, Hungary, Yugoslavia and Rumania had moved to Germany.[1] Taking this factor into account, we find that the pre-war population of Germany was regained not in 1955 but in 1965. Thus, 20 years were needed for the population of Germany to reach the pre-war level. If we consider that the period of active hostilities lasted about five years,[2] this means that for each war year four years were needed to restore the population.

In other countries war losses were compensated much faster. In Japan, for example, the population declined only in 1945. In Yugoslavia the population in 1947 was already above the 1940 level.

The influence of the two world wars was relatively insignificant insofar as the total world population is concerned.

Years	Population of the world (millions)	Absolute increase over 10 years
1910	1,755	—
1920	1,811	56
1930	2,070	259
1940	2,295	225
1950	2,517	222
1960	3,005	488
1970	3,622	617

[1] L. Kosinski, "Migration of Population in East-Central Europe from 1939-1945", *Geographia Polonica*, 1964, No. 2, p. 126.

[2] We refer to the period from May 1940 to May 1945, because in the period from September 1939 to May 1940 the scale of military operations was insignificant.

During the first half of the 20th century, the population of the world increased approximately 1 per cent annually. The 1940s, in the first half of which the Second World War raged, differed little in growth rates from the preceding ten years.

Possibly at some point in the 1940s-1950s there was a decline in population but we have no data on the dynamics of the world population by years and no exact information on the population of China. Had there been no war, the growth of population in the 1940s would most likely have been not 222 million but about 350 million. Even this, however, would not tell greatly on the population growth rates. Only a few countries suffered serious losses in the two world wars, which had an insignificant effect on the world population.

But, as pointed out earlier, we do not get a complete idea of the war's impact by comparing the size of a population before and after a war. Such an idea can be given only by the figure of population shrinkage. In Western Europe, for example, had there been no First World War, the hypothetical population in the mid-1920s would have been approximately 368 million, while actually it was only 346 million. The difference of 22 million reflects the aggregate effect of war on both mortality and births.

The population shrinkage in the U.S.S.R. as a result of the last war is established as follows. At the beginning of 1940 the U. S. S. R. had a population of 194.1 million. In 1940 the natural increase was 1.32 per cent. Consequently the population as on January 1, 1941 was 196.7 million. If we assume that the natural increase in the absence of war would have been approximately 3 million, i.e., somewhat smaller than before the war in view of the possible decline in births, then at the beginning of 1950 the population of the U.S.S.R. would have reached 223.7 million. Actually it was 178.5 million. The difference of 45.2 million is the result of the Great Patriotic War. These 45 million include both direct losses of servicemen and civilians and indirect losses, losses as a result of drop in births and also the migration decrease (displaced persons, repatriation of persons of Polish origin, etc.).

It was only 13 years later, in 1963, that the population of the U.S.S.R. reached the level that would have been

attained in 1950 had there been no war. This, however, does not exhaust the influence of war on the population. Demographically, the echo of war is heard decades later. For example, between 1941 and 1945 births in the Soviet Union declined not only because of the rupture of family ties during the Great Patriotic War, but also owing to the decrease of births during World War I.

In the Soviet Union the demographic echo of the two world wars was heard even 20 and 40 years after they had ended: the decline in births in the 1960s was partly a result of the decrease in births in the 1940s which, in turn, led to a drop in the marriageable contingent in the 1960s; the drop in births in the 1940s was the aftermath of lower births 20 or 25 years earlier.

The influence of war resembles the circles which spread out over water after a stone has been dropped in a pond. The first circle is clearly seen, the second, less distinctly and so on, until the water becomes calm again. The first circle is the influence of the 1941-45 war; the second circle, the influence of the 1914-20 war; the third circle, the influence of both wars combined, etc. In the 1980s the aftermath of war will still be weakly felt, although that influence will naturally be quite insignificant.

In conclusion let us say a few words about the influence of war on the ratio between the sexes of newborn infants, inasmuch as this to some extent accelerates the restoration of the "normal" proportion between the sexes. As early as 1884, *Düsing*,[1] a German scientist, studying material on births in Sweden after the Russo-Swedish War of 1788-90, drew attention to the fact that the proportion of boys among newborn infants after the war increased. But 19th-century wars provided no material for corroborating this supposition. Nevertheless, an analysis made after World War I showed that such a phenomenon does exist, as can be seen from the following figures:[2]

[1] See Düsing, "Die Regulierung des Geschlechtsverhältnisses bei der Vermehrung der Menschen, Thiere und Pflanzen", *Jenaische Zeitschrift für Naturwissenschaft*, Bd. XVII, S. 609.

[2] See S. A. Novoselsky's article "Influence of War on the Sex Composition of Newborn Infants" in a collection of articles by the same author *Voprosy demograficheskoi i sanitarnoi statistiki* (Problems of Demographical and Medical Statistics), Moscow, 1958, pp. 192-93.

Number of Newborn Boys per 1,000 Newborn Girls

Years	Germany	France	England and Wales
1908	1,054	1,048	1,036
1909	1,053	1,044	1,041
1910	1,053	1,045	1,040
1915	1,055	1,046	1,040
1916	1,065	1,049	1,049
1917	1,069	1,047	1,044
1918	1,073	1,065	1,048
1919	1,080	1,059	1,060
1920	1,072	1,062	1,052
1921	1,073	1,049	1,051
1922	1,070	1,049	1,049
1923	1,068	1,053	1,044

The table shows that after World War I the number of newborn boys per 1,000 girls somewhat increased. Whereas prior to the war 5.3 per cent more boys were born than girls, in 1919 this figure rose to 8 per cent. A corresponding increase was also observed in Britain in 1919 (from 4.0 per cent to 6.0 per cent) and in France in 1920 (from 4.5 to 6.2 per cent). For Russia as a whole there are no complete data on the distribution of newborn infants by sexes. But data for Leningrad and Moscow attest to an increase in the number of boys among newborn infants in war time and during the post-war years.[1] For example, in Moscow 4.3 per cent more boys than girls were born from 1911 to 1913, 6.9 per cent from 1917 to 1919 and 7.4 per cent from 1922 to 1924, i.e., after the Civil War. In Leningrad the following excess of boys was observed: 4.6 per cent from 1911 to 1913; 6.3 per cent from 1917 to 1919 and 8.2 per cent from 1920 to 1922.

After World War II this phenomenon was also observed in some other countries, although to a smaller extent. For example, in Germany the number of newborn boys per 1,000 girls was as follows.

[1] See S. Novoselsky, op. cit., p. 194.

Pre-war years		Post-war years *	
1928	1,062	1946	1,079
1929	1,062	1947	1,075
1930	1,061	1948	1,078
1931	1,062	1949	1,076
1932	1,063	1950	1,072
1933	1,065	1951	1,066
1934	1,069	1952	1,071
1935	1,067		
Average	1,064	Average	1,074

* In the Federal Republic of Germany.

Statistics for Leningrad show that while in the pre-war year of 1940 the excess of boys was 4.4 per cent, in 1945 it rose to 9.1 per cent.

The increased proportion of boys among newborn infants in the post-war years can be explained by a number of factors. To begin with, it has been established that there are 117 fertilised ovules of the male sex per 100 of those of the female sex.[1] Some name an even higher figure. The Russian statistician *A. A. Chuprov*, for example, claimed that the "actual ratio of conceptions exceeds 125-130 boys per 100 girls".[2] As a result of higher perishing of foetuses of the male sex in cases of natural abortions and the higher share of boys among stillborn infants, the number of newborn boys is usually 105-106 per 100 girls. This decline in the sex ratio at the moment of birth (106 : 100) as compared to the ratio at the moment of conception (117 : 100) is a direct result of the fact that in abortions (natural, not artificial) the share of male foetuses is much higher than that of female.

The decrease in births in war time means a certain rest for the woman's organism which leads to a subsequent decline in the number of foetuses perishing in the uterus, thus increasing the number of newborn boys.

In post-war years marriages noticeably increase and so

[1] See *Nauka i zhizn*, 1964, No. 3, pp. 78-79.

[2] See article "Sex Composition of Newborns as a Subject of Statistical Study", in *Voprosy statistiki* (Problems of Statistics), a collection of Chuprov's works, Moscow, 1960, p. 337.

does the share of first-borns, i.e., of births by young mothers in good health. Consequently, the number of male foetuses perishing in the uterus also drops.

* * *

Let us briefly sum up the loss of life in the two world wars unleashed by imperialism.

	Millions
Killed and dead in World War I	9.4
Excess mortality of the civilian population in World War I	9.0
Died from the flu epidemic	20.0
Perished in World War II	50.0
	88.4

Thus, the two world wars claimed a toll of nearly 90 million lives.

But these horrifying results seem to leave the imperialists and their servitors completely undisturbed. They are preparing for a thermonuclear war whose destructive consequences would be many times greater than anything in human history.

The A-bombs dropped on Hiroshima and Nagasaki are dwarfed by the latest nuclear weapons. A thermonuclear bomb with a destructive power 5,000 times greater than the Hiroshima bomb has been developed. This is a 100-megaton H-bomb, equivalent to 100 million tons of TNT. Let us note, by way of comparison, that all the explosives used in World War II were equivalent to about 3 million tons of TNT. Consequently, one such bomb is 33 times more powerful than all the explosives used in nearly six years of World War II.

The loss of human life should a thermonuclear war break out would be incalculable.

It is obvious to all that, for many countries, nuclear war would spell the death of the majority of the population.

Ex-President Johnson stated that the United States could destroy 100 million people in one minute and that its adversaries could do the same. Linus Pauling, the renowned American scientist, has calculated that sixty

days after the outbreak of a nuclear war 170 million out of the U. S. population of 190 million would perish, 15 million would suffer grave injuries and only 5 million would survive.

Today no one doubts that a thermonuclear war would be a catastrophe beyond comparison to anything that has ever happened in the course of human history.

However, there is every ground for assuming that the progressive forces of the world can and will prevent the unleashing of a thermonuclear war. We believe that the time will come when the constant nightmare of another world war will recede into the distant past and when happiness, as Victor Hugo said, will become an incontestable right of all the people.

CONCLUSION

Throughout the history of mankind, "scientists", seeking to justify the predatory policy of the ruling classes, have repeatedly sought to depict war as a blessing for humanity.

Ulrich von Hutten, well-known figure of the Renaissance, held that "war is necessary for the culling of the youth and reducing the population". Sebastian Franck, a German philosopher of the same epoch, wrote that "if war and death did not come to our aid we would have to die like vagabonds".[1] There were also "philosophers" who practically deified war. For example Joseph de Maistre, well-known misanthropist and reactionary, wrote that "war as such is divine because it is the law of the world. War is divine in the mysterious aura surrounding it",[2] and so on and so forth in the same vein.

Similar views were expressed by some idealist philosophers. The German philosopher Kant regarded war as a "natural state". In the 19th century Nietzsche wrote: "I advise you to engage not in work but in war...."[3] Elsewhere he said: "You should welcome peace as a means to new wars and prefer a brief peace to a long one... You say that a good aim justifies war. But I tell you: a good war justifies all else.... For the test to be decisive, war must be waged with utter ruthlessness."

[1] G. Bouthoul, *Traité de sociologie. Les guerres, Eléments de polémologie*, Paris, 1951, p. 278.

[2] Quoted from Letourneau, *La guerre dans les diverses races humaines*, Paris, 1895, p. 3.

[3] Quoted from V. Skopin, op. cit., pp. 49-50.

Nor is there a lack of such sentiments in our times. At the end of the 19th century U.S. Rear Admiral S. Luce wrote that "war is one of the great agencies by which human progress is affected". [1]

The extolling of war was an integral element of the fascist ideology. Otto Ammon, reactionary German social anthropologist and godfather of nazi "theories", wrote that "war is a blessing for mankind because it constitutes the only means for a test of strength between nations and awards victory to the more enterprising". [2] Mussolini lauded war in the same vein. In a speech delivered from the balcony of the Palazzo Venezia in the summer of 1940 he said that war was a "struggle of the fertile and young nations against the unfertile nations doomed to perish". [3]

Some psychologists added their voice to the chorus of war apologists. For example, Sigmund Freud, eminent bourgeois psychologist, held that war was a natural display of man's "instinct of aggression". In an open letter addressed to Albert Einstein in 1932 Freud wrote that war "seems fully natural, biologically well grounded and practically unavoidable". [4]

Human losses in 20th-century wars in Europe, as seen from the computations given earlier, have risen many times as compared with past centuries. But the worshippers of war even in the last century sought to prove that human losses were declining.

For example, T. R. Malthus wrote at the beginning of last century: "War, the predominant check to the population of savage nations, has certainly abated, even including the late unhappy revolutionary contests." [5]

Many other theorists set out to prove that the "price" of war is systematically declining and that since they

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[1] S. Luce, "The Benefit of War", *North American Review*, CLIII, 1891, p. 272.

[2] O. Ammon, *Die Gesellschaftsordnung und ihre natürlichen Grundlagen*, Jena, 1896, S. 156.

[3] F. Burgdörfer, *Krieg und Bevölkerungsentwicklung*, München und Berlin, 1940.

[4] See B. Smulevich, *Kritika burzhuaznykh teorii i politiki narodonaseleniya* (Critique of Bourgeois Population Theories and Policy), Moscow, 1959, p. 271.

[5] T. R. Malthus, *An Essay on the Principle of Population*, 6th Ed., Vol. I, London, 1826, p. 534.

are becoming "cheaper" this "method" of resolving conflicts should not be ignored. They even tried to demonstrate it in the form of a "law of diminishing losses in wars". These theorists asserted that "thanks to the invention of firearms" ever fewer people perish in war. They referred to the fact that in the past cold arms (lance's spears, swords, sabres and daggers) were chiefly used which required close combat, often turning into hand-to-hand fighting. As weaponry developed the distance between the belligerents increased and close combat was replaced by distant fighting, while hand-to-hand fighting, which is particularly costly, was becoming rarer and rarer. As a result, they averred, manpower losses in battle were declining and war was becoming "cheaper and cheaper". This point of view was voiced long ago in military literature. As early as 1867 Liprandi wrote: "With the invention of firearms battles began to be fought with enemies frequently not coming closer together than bullet range, with manoeuvres consummating the battle. For this reason, in the opinion of certain theoreticians, battles, too, became more humane. Consequently with the invention of *long-range* guns, bloodshed should naturally decline. Perhaps it will decline still more when arms are so improved that carbines will strike at a distance of *five versts* and cannons, at *25 versts*." [1] Here is how this question was treated by Gottesheim, a German military writer: "Improvement of arms, far from increasing losses, reduces them. This is explained by the fact that when there is a shortage of firearms, close combat with bigger losses always prevails." [2] Goltz, another German writer specialising in war, stated at the end of the last century: "The more impressively and forcefully the influence of arms is manifested, the sooner it becomes formidable; we thus see that on the whole battles are becoming less and less bloody as the infernal machine of war is improved." [3] Kübler, a German army doctor, added his voice

[1] I. Liprandi, *Materialy dlya otechestvennoi voiny 1812 goda* (Materials for the Patriotic War of 1812), St. Petersburg, 1867, pp. 8-9.

[2] D. Gottesheim, "Statistik der Kämpfe der Neuzeit, 1792 bis inclusive 1871", *Streffleur's Österreichische Militärische Zeitschrift*, Bd. I. H. 1-2, 1889, S. 170.

[3] Goltz, *Volk im Waffen*, 1899, S. 11.

to the general chorus of war apologists early this century. He also assumes that in modern wars losses are smaller than in earlier ones, "on the one hand, owing to the more humane methods of warfare, in which the wounded and the sick are spared, and, on the other, owing to the successes of medicine in the treatment and prevention of epidemics". [1]

Frölich, whom we have quoted earlier, also thinks that the number of war victims is declining. He writes: "Facts and comparisons lead to the conviction that wars and particularly individual battles in Antiquity and the Middle Ages caused much bigger losses than wars and battles today." [2] Öttingen, a German statistician, wrote at the end of the 19th century that "as a result of civilisation and mercy, human losses in war time are not as great as formerly". [3] Pitirim Sorokin holds a similar point of view. Comparing losses in 19th-century wars with those in Antiquity, he writes that the "decline in the devastation and brutality of war" has become "truly immense". [4] The French sociologist Vaccarot is of a similar opinion.

Steinmetz, a Dutch "philosopher of war", voices the following opinion: "Although social science has only recently begun to employ better methods for achieving its tasks, nevertheless numerous social laws which can be demonstrated inductively and indisputably have already been firmly established. I would like to add to them the *law of diminishing war losses.*" [5] (Our italics.—*B. U.*)

Some authors are trying to present figures to prove this "law". For example, Sean, an official of the U. S. War Department, claims that the percentage of killed declines with the development of weaponry. As proof he cites the following percentages of killed in various battles:

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[1] Kübler, "Kriegs-Sanitätsstatistik", *Klinisches Jahrbuch*, Bd. IX, 1902, S. 316-17.

[2] H. Frölich, "Über die Menschenverluste in Kriegen", *Streffleur's Österreichische Militärische Zeitschrift*, Bd. I, 1888, S. 106.

[3] A. Öttingen, *Die Moralstatistik in ihrer Bedeutung für eine Socialethik*, Erlangen, 1882, S. 680.

[4] P. Sorokin, *Prestupleniye i kara, podvig i nagrada* (Crime and Punishment, Exploit and Reward), St. Petersburg, 1914, p. 378.

[5] R. Steinmetz, *Soziologie des Krieges*, Leipzig, 1929, S. 92.

Cannes 60 per cent, Waterloo 22 per cent, Gettysburg 8.5 per cent, and Meuse-Argonne 2.5 per cent.[1] As regards the Meuse-Argonne battle in 1918 he points out that it lasted for 47 days and, consequently, the percentage of killed was only 0.05 per cent daily. In other words, he claims that the percentage of killed during World War I was less than one-tenth of a per cent of those during the battle of Cannes. Such comparisons can only be called "juggling with figures".

First of all, the choice of battles in this list is absolutely arbitrary. It would be possible to choose battles with directly opposite results. Second, modern wars cannot be compared with battles in the past.

Some authors, Roloff[2] for example, are of the opinion that losses in wars fluctuate under the influence of definite causes, and do not show a tendency to rise.

Alongside such views there are also those who state that future wars will bring much bigger losses than past battles. For example, I. S. Bliokh in his voluminous study published at the end of the last century wrote that in future wars "losses will be incomparably larger than in the past".[3] He held that the introduction of universal military conscription in almost all countries increased the number of war victims because it delayed the moment of the enemy's exhaustion. Moreover, an increase in losses was inevitable in view of the introduction of new lethal weapons.

But these warning voices were drowned in the general chorus of advocates of militarism.

Developments in the 20th century have put an end to these disputes. "Philosophers" who discovered the law of "diminishing war losses" witnessed world wars which, by the scale of human losses involved, dwarfed all past wars.

But to some votaries of war even these huge losses seem insignificant. For example, L. M. Chassin, a French

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[1] Quoted from G. Bouthoul, op. cit., p. 260.

[2] G. Roloff, "Der Menschenverbrauch in den Hauptschlachten der letzten Jahrhunderte", *Preussische Jahrbücher*, Bd. 72, 1893, S. 150.

[3] I. Bliokh, *Budushchaya voina v tekhnicheskom, ekonomicheskom i politicheskom otnosheniyakh* (The Technical, Economic and Political Aspects of Future Wars), Vol. V, St. Petersburg, 1898, p. 369.

general, wrote in his article "An Outline of World Strategy" published in 1949, that war is incapable of stemming the growth of population: "The population of the world continues to increase in quite alarming proportions and, until now, war has been a poor means of annihilating people."

The general next voices his regret that Soviet losses in the last world war were not as large as he would have liked. Chassin writes the following: "Even if the Russians were to lose in the blitzkrieg we are now discussing 30 million people ... they would still have 150 million left and, some ten years later, would have regained their former population." He then expounds his dream that "it would be extremely interesting to find a military method of annihilating the population without destroying buildings...".[1]

Some "scientists" even regard the huge losses in the two world wars as desirable. They consider them an effective means of combating "overpopulation". The French sociologist G. Bouthoul, for example, thinks that war "restores the disturbed equilibrium". In his opinion, war is a means for absorbing the superfluous population which is constantly being produced by overfertile peoples.[2]

"Inasmuch," Bouthoul writes, "as all social formations in the history of mankind have been marked by wars, it must be noted that war performs a definite function, that it is a kind of social institution. The function of war is, apparently, to destroy the surpluses of accumulated human capital."[3]

From the viewpoint of such "scientists" the slaughter of people in a war is in itself a blessing for mankind. The slaughter of millions of people in their prime is declared the best means of combating overpopulation, an "industrial" method of destroying superfluous lives.

The link between the dynamics of the population and war is pictured by Bouthoul as follows: war is a periodically inevitable and desirable phenomenon. "Without war

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[1] L. M. Chassin, "Esquisse d'une stratégie mondiale", *Revue de défense nationale*, Novembre 1949, p. 423.

[2] G. Bouthoul, *Cent millions de morts*, Paris, 1946, pp. 99, 35-36.

[3] Quoted from "Horizons", *La Revue de la Paix*, Avril 1959, p. 15.

mankind would be threatened with the danger of perishing like an apple-tree overburdened with fruit. The roots of war are hidden in demographic soil from which it is useless to tear them out since man is endowed with an eternal bellicose impulse (like the impulse to sleep and eat), an impulse which migrates from nation to nation.... Removed from the soil of one people it shifts to another."[1]

Thus, according to Bouthoul, just as a man wants to eat and sleep, so he wants to fight; this is an innate trait of human nature, the only salvation from overpopulation. A special term "population pressure" was even invented. "It is this pressure of enormous numbers of human beings," writes James Dawson, "far beyond what many individual countries can support from their own natural resources, that must be emphasised as the chief cause of aggression in the world today."[2] Other "scientists" go to such lengths as to claim that the "world's evergrowing population makes the use of the A-bomb necessary".[3]

The attempt to conceal imperialist wars behind the screen of "overpopulation" is not new. Lenin quoted the words of Cecil Rhodes, an ideologist of British imperialism, who said in 1895: "We colonial statesmen must acquire new lands on which to settle the surplus population, to provide new markets for the goods produced in the factories and mines.[4]

In our age the nazis used the growth of population to justify their predatory conquests. Hitler referred to the high density of Germany's population as the reason for the hard economic conditions. Hence the nazi propaganda of the inevitability of conquering *Lebensraum* for the Germans by annihilating other races, the Slavs in the first place. "Complete biological extermination of the Russians" was stipulated in the memorandum "Considerations for the General Plan of the Ost Reichsführer SS", of April 27, 1942, a memorandum recently made public along with other important documents. The "programme" laid down in this memorandum stipulated that "voluntary

[1] Quoted from V. I. Skopin, op. cit., p. 57.
[2] F. James Dawson, *Aggression and Population*, London, 1946, p. 14.
[3] Paul Reboux, *Trop d'enfants*, Paris, 1951, p. 255.
[4] Quoted after V. I. Lenin, *Collected Works*, Vol. 22, p. 257.

sterilisation should be propagated, child mortality must not be combated and mothers should be kept ignorant of infant care and children's diseases". The natural increase of the population was to be stopped by the killing of "3-4 million Russians annually".[1] Such was this cannibalistic programme of conquering *Lebensraum.*

Some "theoreticians" held that wars expand *Lebensraum* for both belligerents. Arthur P. Chew, for example, wrote in this vein in his article in *The New Republic*, an American weekly. Discussing British colonial wars, he says: "Under certain conditions war may lead to an increase in food supplies by releasing new territories for development; indeed, that result may eventually be realised even from the late world war (the 1914-18 war.— *B. U.*). It is, therefore, necessary to concede, at least from a selfish national standpoint and perhaps in some degree from a broader standpoint, that war is not always a futile weapon in the struggle for bread."[2]

There are even "scientists" who regard atomic and bacteriological weapons as a factor of "progress". Professor Kingsley Davies of Columbia University, New York, wrote in 1952: "A third world war, fought on a total scale and with atomic and biological weapons, would possibly set the stage, once its tremendous destruction had passed, for a much faster rate of progress than otherwise seems likely."[3]

All these militarist, misanthropic "concepts" and "theories" advocating war are combated by the ideology of Marxism-Leninism, the loftiest and most humane ideology, which shows the way to building a communist society free from exploitation and war.

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The main purpose of our work was to determine the scale of war losses among direct belligerents in Europe during the last three and a half centuries and to

[1] *Literaturnaya Gazeta*, June 24, 1959.

[2] A. Chew, "Population, Food and Imperialism", *The New Republic*, No. 732, December 12, 1928, pp. 86-87.

[3] K. Davies, "The Controversial Future of Underdeveloped Areas", *World Population and Future Resources*, New York, 1952, p. 23.

demonstrate the immense calamities predatory wars have brought to mankind, especially in the epoch of imperialism.

Reactionary circles of the imperialist powers, contrary to the will of the peoples, do not want to reduce international tension. They are again helping to militarise West Germany and are fomenting war in South-East Asia and other parts of the world.

The Soviet Union and other socialist countries are exerting every effort to prevent another war. "Wars have more than once brought Europe misfortune and destruction," it was stated in a declaration of member states of the Warsaw Treaty Organisation. "We remember the tens of millions of men, women and children consumed in the flames of World War II. It is the duty of the governments of all countries to prevent another explosion, to save Europe and mankind from another, immeasurably greater tragedy." [1]

In our days the struggle for the prevention of war has acquired the nature of a world-wide movement for peace.

The Soviet Union is the standard-bearer of this movement. As early as 1959, the Soviet Government submitted to the United Nations General Assembly a programme of general and complete disarmament.

This programme is clear-cut and comprehensible. Its aim is to make World War II the last one and to prevent a third world war from ever breaking out. For this purpose it is necessary to scrap all armaments, to dissolve the military establishments and general staffs, to abolish military service and disband all armed forces.

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[1] *Pravda*, May 27, 1958.